A SYNTHESIS OF A.I.D. EXPERIENCE: SMALL-FARMER CREDIT, 1973-1985

A.I.D. SPECIAL STUDY NO. 41
(Document Order No. PN-AAL-074)

by

Joseph M. Lieberson, Financial Economist
(A.I.D., Bureau for Program and Policy Coordination
Center for Development Information and Evaluation)

Research Assistants:

Katherine A. Kotellos, Research Analyst
(Private Consultant)

George G. Miller, Economist
(A.I.D., Bureau for Program and Policy Coordination
Center for Development Information and Evaluation)

U.S. Agency for International Development

September 1985

TABLE OF CONTENTS

PREFACE

This report presents the results of an economic analysis that measured the developmental impact of A.I.D. small-farmer credit programs. From l973 to 1985, A.I.D. launched about 80 projects that included a credit component. An examination of those projects identified 50 projects in which credit was an important part of the project and adequate data were available.

Although some projects provided only credit, most tied credit to a package of other inputs. In those cases, credit was used as a promotion tool to encourage the use of a new technology package, which typically included improved seeds, fertilizer, irrigation, and pesticides.

A.I.D.'s rural development approach has often been termed a supply-led or pump-priming approach. Small-farmer development is achieved by increasing farm production and incomes by encouraging the use of new technologies.

The study found that credit was often not a major constraint. Credit is typically a very small part of agricultural production costs. Therefore, credit (even highly subsidized credit) cannot hope to overcome other developmental constraints. The suitability (or unsuitability) of such factors as the technology package, input supply, land tenure, and markets was usually more of a problem then the lack of formal capital sources.

The study looked at both successful and unsuccessful projects to identify the factors that were most critical to program success. The analysis identified a pattern of program elements and linkages that tended to generate success -- that is, a winner's profile.

The report identifies when small-farmer credit is needed,

under what set of circumstances it is most effective, and how A.I.D. and others can best deliver that credit. The findings of this study should help those designing new small-farmer credit projects.

SUMMARY

The "Green Revolution" of the early 1960s demonstrated that improved seed, fertilizer, irrigation, and farming techniques could greatly increase yields. It proved that agricultural development was the same as any other development effort -- new technologies and capital investments could dramatically increase productivity.

Based on the success of the Green Revolution, A.I.D. expanded its agricultural assistance programs. A.I.D. and other-donor research efforts developed new and improved high-yielding seeds that required a package of inputs and supporting services. By the end of the l960s, there were some remarkable successes. In Mexico, the Pakistan Punjab, and the Indian Punjab, multiple cropping and higher yields more than doubled wheat production. Similar results were achieved with rice in parts of India, Pakistan, the Philippines, Thailand, and other Asian countries. Whereas there were those successes, there was almost no impact in Africa. In other regions, the majority of farmers did not participate in the Green Revolution.

For several reasons, farmers were reluctant to adopt the new technology packages. One explanation was that farmers were poor and lacked the capital needed for investment in the new technology. Therefore, low-cost credit was seen as a critical promotional tool. In most cases, credit was included as part of an integrated agricultural project that included new seeds, fertilizer, extension, and marketing services. In a few cases, credit-only projects were tried.

Although more and more credit programs were being launched, failures began to mount -- something was wrong. The development landscape was littered with failed credit projects.

To deal with this problem, A.I.D. held its landmark 1973 Spring Review of Small-Farmer Credit. After exhaustive studies, analyses, and meetings, conditions necessary for a successful credit program were identified. Farmers needed (1) an appropriate technology that presented low risks; (2) technical assistance, assured input supplies, and supporting agricultural services; and (3) financially viable credit institutions.

It has been over a decade since the Spring Review. The present synthesis is designed to see if small-farmer credit programs are now working better. Over 150 evaluations of A.I.D. credit projects were examined, and 50 projects were analyzed in depth. The "Winner's Profile" (see Section 2) provides a summary of these findings. The successful projects recognized

the following factors.

1. Farmers must be able to invest credit productively. In fact, appropriate technology is a critical precondition for the success of any credit project. If a suitable technology (along with supporting services such as inputs, extension, and produce marketing) is unavailable, then it makes little sense to start a credit project.

At the start of nearly every project it was assumed that profitable small-farmer investments existed. (The assumption was rarely tested or proven.) Based on that assumption, projects concentrated on agricultural extension and credit delivery mechanisms, an approach that was usually a mistake. All too often the new technology, which was to double or triple crop yields, generated only small increases in output or completely failed. Another problem was that supporting services were not available on a timely basis. Without assured fertilizer sup-plies, crop marketing, and storage, projects failed. The lessons in this case are clear: a farm is like any business. There must be profitable investment opportunities. Otherwise, it makes little sense for a banker to lend a farmer money. Before starting a credit project, donors need assurance that appropriate technologies and supporting services are available. Only then does a credit program make sense.

2. Developing country government policies and economic conditions also affect project prospects. Many developing country policies have an antiagriculture bias: for example, low grain prices, controls on grain marketing, an overvalued foreign exchange rate, high taxes on export crops, and limited availability of farm inputs. Antiagriculture policies affect all farmers. A donor project reaches only a small percentage of the farmers. The impact of one project can do little to compensate for economy-wide disincentives. Developing country policy reforms are often needed if other agricultural development efforts are to succeed.

The economic climate (political instability, incoherent and changeable economic policies, interest rate controls, and hyper-inflation) can doom a credit project. If loan terms do not reflect inflation rates and inflation rates are high, a lending institution will steadily lose capital. Even if an institution is recovering its loans, it cannot survive for long if it is being repaid in a rapidly depreciating currency.

3. The final area of concern is the mechanism for credit delivery/recovery: creditworthiness assessment, loan disbursements, loan monitoring, and loan recovery. Lending institutions that had local-level outreach mechanisms were most attuned to local needs and had the lowest default rates. The use of farmer groups was also important when such groups were democratically organized and committed to development. Such groups were more likely to adopt new technology, and the social pressure of the group discouraged loan defaults.

The thoroughness of a loan application form and the number of bureaucratic levels of loan review had little relationship to repayment rates. The same could be said for the type of collateral used or whether a borrower had loan cosigners. The key factor was the local loan officers. Their ability to judge the character and creditworthiness of a borrower (and the profitability of a proposed investment) was critical to project success. An additional factor was the accounting and loan-monitoring system. Many projects failed because of inadequate bookkeeping -- the institution did not know who owed how much and when payments were due. The type of credit institution (bank, co-op, or credit union) was not that important. The critical factor was management and institutional strength, elements of which are as follows:

-- Did loan officers know how to assess credit needs?

-- Were loans provided in a timely manner?

-- Were adequate records and controls maintained?

-- Did the lender have a management system that allowed it to identify problem loans at an early stage in order to work with the borrower to ensure repayment?

Projects that worked with an existing institution (rather than creating a new one) had the best success. Projects that provided technical assistance and training were able to improve institutional capacity and had a better chance of success.

Most projects provided an interest subsidy to borrowers, which was often their undoing. This study found little justification for subsidies, because credit harms both the borrower and the lender.

Good farmers, using efficient technology, were able to profitably increase their output and pay free market rates of interest. In fact, many of these farmers were already paying high market rates to local moneylenders. If the technology could not cover the cost of capital, there was little justification for such investments.

Cheap credit runs the danger of creating resource misal-locations by encouraging inappropriate technology and inappropriate investments. Most developing countries have an abundance of labor and a shortage of capital. Cheap credit often encourages capital-intensive investments and the rural poor, particularly landless laborers, suffer as agricultural employment drops.

In addition to the damage at the farm level, there are problems for the lending institution. Lenders that provided cheap capital were not financially viable. A financial institution is like any business. If it is ever to become financially self-sustaining, it cannot continually buy high and sell low. As long as donors provided concessional aid, they

could continue lending money at a loss. Donors are not helping the rural sector, however, by encouraging nonviable institutions. Farmers need a steady flow of capital from self-sustaining financial institutions that will be in operation for many years.

The projects that set lending rates high enough to cover their cost of capital were successful. These were often the newer A.I.D. projects that lent funds at market rates of interest and paid market rates to rural savers. They provided the financial services that the rural sector needed. In addition, because they were covering their costs and raising funds from the local market, they had the best chance of achieving viability after donor funding ended. Lacking a subsidy, they had to run their loan program efficiently. Paying free market rates for their capital was a useful business discipline.

1. EVALUATION OBJECTIVES AND METHODOLOGY

1.1 Background

Credit programs have been a significant component of U.S. economic assistance. Although there have been changes in emphasis over time, credit has been an integral part of A.I.D. agricultural programs in every region. In the l960s, Latin America and Asia had most of the credit programs. Beginning in the early l970s, programs were started in several African countries, eventually representing more than half of A.I.D.'s small-farmer credit program.

The l973 A.I.D. Spring Review of Small-Farmer Credit (see Appendix A) extensively analyzed credit issues and helped the donor community reach agreement on the conditions necessary for a successful credit program. These factors are as follows:

- -- A proven technology, appropriate to small-farmer needs
- -- A means to reduce the risk associated with the new technology
- -- Technical assistance and supporting agricultural services
- -- Financially capable credit institutions

This study was designed to see whether 1973-1985 small-farmer credit programs benefited from the experience of the Spring Review. Surprisingly, the study found that post-1973 credit projects continued the pattern of the earlier period and made many of the same mistakes. The lessons of the Spring Review have clearly not been fully implemented.

1.2 Purpose and Scope of This Study

This synthesis was designed to assess the economic impact of A.I.D. programs by examining various conceptual approaches to small-farmer credit and alternative institutional delivery mechanisms. The authors examined 150 published evaluations (see Appendix E) of 80 A.I.D. projects to identify the set of circumstances in which credit was an appropriate intervention and to determine whether the benefits of credit reached small farmers. The analysis was designed to identify factors that were most critical to program success and the indicators that tend to correlate with that success. The goal of this study, then, is to establish a pattern of program elements, linkages, and interventions that generate success (the programs, institutions, and delivery techniques that work best, and under which conditions) -- that is, "a winner's profile."

The analysis comprised the following steps:

-- A list of hypotheses and assumptions were developed to help explain in which circumstances small-farmer credit was needed.

-- A review was made of the analysis and conclusions of A.I.D.'s l973 Small-Farmer Credit Review (see Appendix A).

-- An examination of A.I.D.'s project portfolio identified all projects, implemented since l973, that included a small-farmer credit component (80 projects).

-- An evaluation matrix was developed to include the factors that appeared to be critical to project success (see Appendix B).

-- About 150 evaluations and 20 project papers were collected, but many lacked data and others had only a minor credit component. Those were eliminated from the analysis. A final list of 50 credit projects was selected for analysis.

-- A pattern analysis was conducted to determine the characteristics/factors essential to project success/failure.

-- A special analysis of recently implemented A.I.D. projects was prepared to determine whether they used any new and different approaches.

-- A winner's profile was developed based on the analysis of the total portfolio.

-- A credit issues checklist was developed (see Appendix C) and used for the statistical analysis. The conclusions drawn from that checklist are summarized in Section 5.

2. WHAT IS A SUCCESSFUL SMALL-FARMER CREDIT PROJECT?

This section briefly summarizes the findings of this study. A more detailed discussion of each topic appears in later sections of this paper.

Project success was judged by the financial viability and sustainability of (1) the credit institution and (2) the small farmer, using the following criteria:

1. The Credit Institution

   Loan appraisal, loan recovery, bookkeeping, and other management skills are adequate.

   Loan recovery rates and charges are adequate to cover the cost of capital, administrative expenses, defaults, and inflation.

2. The Small Farmer

   Credit reaches small farmers on a timely basis and is not skewed to larger farmers.

   Small farmers use loan funds for high-return investments.

   There are significant increases in agricultural output, incomes, and employment.

Approximately one-third of the projects analyzed were judged to be reasonably successful. This study analyzes the factors that were common to those projects to develop a winner's profile. These are the factors and project design elements that worked well and reinforced success. Although experience indicates that it is not realistic to expect all of the conditions to be present in every project, the successful projects generally included most of the factors whereas the less successful ones did not.

The factors are discussed below under four categories -- technology, government policies, credit delivery, and rural resource mobilization.

2.1 Technology

Traditional small-farmer production is labor intensive. It requires only limited amounts of capital, which can be self-financed or obtained from the informal credit market. In such cases, there is little need for credit intervention. A more

formal credit program will be needed only if the farmer is to adopt a much more capital-intensive production technology. However, not all new technologies require credit. Some new technologies are not highly capital intensive. Others have a high and immediate payoff. In such cases, the farmer, friends, relatives, and the informal credit market can supply needed capital. If this is the case, then there is no need for credit intervention. It is only needed when new agricultural practices require greatly increased working capital (e.g., for improved seeds, fertilizer, fuel, hired help) or fixed capital investment (e.g., wells and irrigation equipment, plows, tractors).

Success is probable provided that the following conditions prevail:

-- A tested and proven technology exists that is appropriate to small-farmer needs. Ideally, the technology
should have been tested on farmer plots over at least two seasons.

The rate of return on the technology is great enough to overcome the farmer's risk-aversion attitude.

Supporting services are available and dependable enough to support the new technology (assured input supply, extension, marketing, and other services).

2.2 Government Policies, Regulations, and Controls

Appropriate policies are a precondition for improved technology and the related use of credit. Government policies often discriminate against the rural sector. For example, if a government has a policy of cheap food for urban consumers, high taxes on export crops, cheap capital, high minimum wages, and an overvalued foreign exchange rate, then there may be serious problems with any attempt to encourage increased agricultural production.

Success is probable provided that the following factors are present:

-- The host government's domestic economic policies toward the rural sector are favorable to the interests of the small farmer.

-- Farmgate prices of crops justify the increased agricultural investments required for the new technology.

-- Input supplies (at the farm level) are available when needed and at prices that justify their use.

-- Government financial and interest rate controls allow

rural financial institutions to be financially viable.

2.3 Credit Delivery and Institutional Mechanisms

There is no one ideal institutional mechanism for delivering credit to small farmers. The type of delivery mechanism depends on a country's political, economic, and cultural history. There are several institutional mechanisms available, such as agricultural and development banks, cooperatives, and credit unions. It is important to recognize, prior to project startup, the delivery institution's capability and its institutional development needs. The project must necessarily focus on both institutional development and financial viability. High transaction costs, low interest rates, and loan defaults can rapidly decapitalize a loan program. Rapid decapitalization is usually a reflection of institutional difficulties -- financial, technical, and administrative problems.

Projects that were successful recognized these factors:

-- Credit does not have to be directly tied to technology extension. However, profitable small farmer investments must exist.

-- Local-level outreach mechanisms are close to the community and attuned to local needs. Cooperatives and farmer groups were most often used in successful projects. However, other institutions with village-level branches also have worked well.

-- It is generally easier to change the orientation of an existing institution toward small-farmer needs rather than to create a new financial institution.

-- If an agricultural credit institution is to develop long-term sustainability, it must charge an interest rate that reflects the true opportunity cost of capital and the cost of administering credit. The analysis clearly indicates that subsidized credit is not required. Institutions can charge higher market interest rates and still not discourage small farmers.

-- The ability to lend without requiring land as collateral is important.

-- The integration of farmer and nonfarmer members in the same credit union can strengthen the institution by spreading the portfolio risk among different economic activities and by helping to level the seasonality of capital flows. All farmers tend to need credit at the same time.

-- Joined in a group, small farmers are more prone to adopt

new technology. Dealing with groups rather than individuals lowers the administrative costs for the credit institution. Also the social pressure effect discourages farmers from defaulting on loans.

2.4 Rural Resource Mobilization

Subsidized credit, targeted to a disadvantaged group, may become a politically useful social welfare mechanism. However, it runs the risk of failing the test of economic efficiency and sustainability. Such programs cannot meet the credit needs of the majority of the population and usually have to ration credit to the safest borrowers. Such programs are dependent on outside funding and are not part of the local community. They are viewed by the local community as an outside dispenser of favors, and borrowers do not feel compelled to repay the debt. Distrust toward such an outsider can develop.

Projects that were successful recognized these factors:

-- Borrowers are more likely to repay loans promptly when they know that the resources come from their neighbors.

-- A local institution attuned to local savings/borrowing needs of its own people has the best chance of becoming viable.

-- Institutions that provide a savings component (with an interest rate high enough to encourage savings) will be able to mobilize domestic resources and eventually be able to dispense with concessional donor assistance. They stand an excellent chance of reaching self-sustaining financial viability.

3. THE SETTING FOR A.I.D. ASSISTANCE

3.1 U.S. Economic Assistance Priorities

Before examining A.I.D.'s small-farmer credit program, it is useful to see how it fits within A.I.D.'s overall assistance program. The Foreign Assistance Act (Sections 101 and 531) states that the overall objective of U.S. bilateral economic assistance is to stimulate broadly based, self-sustaining economic growth in developing countries. Such assistance promotes international peace and stability by assisting developing countries to conquer poverty, hunger, illness, and ignorance.

When examining development constraints, increased agricultural production and, specifically, the ability to produce more food are seen as the major problem facing developing

countries. As stated in the 1984 Development Coordination Committee Development Issues report:

> Experience over the last three decades also shows that dynamic agricultural growth is in most countries a necessary, though not sufficient, condition for broadly based overall economic growth that permits the conquest of hunger and sustained improvement in per capita living standards.{1}

Although there is a need for increased agricultural growth and, specifically, increased food production, for many developing countries the opposite has been the case. Food production and consumption levels have seriously deteriorated in most of the 60 low-income developing countries. Many of those countries, particularly in Africa and the Caribbean, are unable to grow the food they need or to generate the foreign exchange required to meet their growing food-import requirements. In fact, over the past decade, per capita food production in most low-income countries has declined. To reverse this trend and to meet the growing demand for food generated by both population growth and rising incomes, food production must increase by 3-4 percent annually. A.I.D. has set increased agricultural production and increased rural income as its major development task. Well over half of the Development Assistance account is earmarked for agriculture, rural development, and nutrition.

A major A.I.D. objective is to help developing countries ensure food security by increasing their agricultural production (particularly food crops), with an emphasis on increasing the productivity, income, and market participation of small farmers. The emphasis on small farmers is central to A.I.D.'s agriculture strategy. The l984 Development Issues report explained that strategy to include

> a special concern for effectively increasing the productivity, incomes and market participation of small producers. These producers comprise the great majority of rural economic units in most countries and are thus important for both increased food production and consumption. Furthermore, the demand for goods and services by the bulk of small farmers and their families who participate in market sales and purchases may constitute an important stimulus to off-farm rural enterprises and the generation of employment opportunities for landless laborers and for families engaged primarily in subsistence agriculture.{2}

{1} Development Coordination Committee, Development Issues: U.S. Actions Affecting Developing Countries, Annual Report of the Chairman (Washington, D.C.: International Development Cooperation Agency, 1984), p. 83.

{2} Ibid, p. 83.

3.2 A.I.D.'s Approach to Agricultural Development

Increased agricultural production is key to A.I.D.'s development assistance strategy. Agricultural programs are designed around the need to find and then introduce new agricultural technologies; to develop institutions and the human resources that can generate, adapt, and apply the improved technology; and finally to encourage developing country government policies (price and market incentives) that will effectively encourage productive use of the new technology. The key starting point is the new technology.

The subsistence farmer is currently producing at a low level. New ways have to be found to increase this farmer's output. A.I.D. generally works on basic and applied research at international agricultural research centers, agriculture universities, and crop research farms. The research is designed to develop improved crop varieties, optimal fertilizer application rates, improved plowing and soil management techniques, optimal irri-gation practices, and better harvesting practices. When a better technology is developed, the next step is extension -- getting it to the farmers through the following steps:

- -- The new seed is multiplied at seed farms.
- -- Fertilizer, pumps, and other inputs are made available.
- -- The marketing system that moves the farmer's increased output is strengthened.
- -- Agricultural extension agents promote the new technology through the use of demonstration plots and training programs.

However, even with all of these efforts farmers often fail to adopt the new technology package. Studies have shown that small farmers are rational and well informed about traditional agricultural technology for their own type of land and growing conditions. They and their ancestors have been growing crops in the same way for ages. They know how to use traditional technology to maximum advantage and are reluctant to try something new and unknown.

The fear of trying something new is often reasonable. Given their low level of income and the vagaries of weather, small farmers are naturally averse to risk. Considering both good and bad crop years, they operate on a very slim margin. If a new technology fails, they and their families could starve. Risk and uncertainty are dominant forces in their decision-making, and thus they are reluctant to adopt new and unfamiliar technologies.

To encourage adoption, a number of promotion techniques have been used. The promotion rationale assumes that once farmers see

and then try a new technology, they will see its payoff and use it in future years. An initial "selling" or promotion effort is required.

A typical approach is to have demonstration plots in rural communities farmed by extension agents, a school, or a model farmer. Another approach that can speed up the adoption process is to provide free (or heavily subsidized) inputs. A final approach is to use credit.

Credit is seen as a way to overcome farmers' risk aversion and their lack of investment capital. An integrated agricultural production approach often includes training sessions for village leaders, active promotion by extension agents, and credit to finance the complete technology package.

The approach reasons that farmers are poor, with limited capital to invest in a new technology. Therefore, credit will provide the funds they need to invest in the new inputs. It is assumed that the technology will have such a high rate of return that the farmers will be able to repay their loans and then be eager to use the technology on their own in the following year. The farmers only need to see for themselves what the new technology can do. This approach assumes that credit is a tool that will help sell the technology.

Although A.I.D. agricultural development projects typically rely on new and improved technology, that is not always the case. In many developing countries many yield-enhancing techniques already exist. In those situations, it is assumed that small farmers are not using the new techniques because they are poor and lack capital to invest. Credit is seen as the catalyst that will help poor farmers modernize. Once they have capital to buy needed inputs they will be able to increase their production and income.

In summary, the following points are stressed:

-- A.I.D.'s development program concentrates on increasing agricultural production with an emphasis on food crops.

-- Increased small-farmer crop production will help a developing country meet its food needs while improving rural welfare.

-- The effort is targeted on new, high-yielding technology suitable for small farmers.

-- If small farmers are to adopt the new technology package, they must buy and use the recommended inputs.

-- Poor farmers are risk averse and lack the capital needed to invest in the new technology.

-- An injection of outside credit is needed to encourage farmers to use the new technology.

Whereas most credit projects fit the credit model described above, some new projects are not tied to specific efforts to boost agricultural production. They are designed to increase rural resource mobilization by developing rural financial markets. They generally offer high market rates of interest while providing loans to both agricultural and nonagricultural enterprises.

3.3 A.I.D.'s Small-Farmer Credit Policies

Over the last 10 years, A.I.D. programs have operated under the "Guidelines on Project and Program Planning for Small Farmer Credit".{3} Those guidelines are summarized below.

A.I.D.'s objective is to assist low-income rural people. Therefore, credit and other agricultural assistance programs should be oriented toward small-farmer groups. However, credit may not be the best form of assistance for this group; if the small farmer does not make a clear profit from the use of credit, the credit program is unlikely to succeed. Missions should consider the following points when designing farmer credit programs:

-- Credit is not a panacea for the problems of the small farmer. Providing credit will not increase output or net income unless a series of conditions are met, the most important of which is that profitable investment opportunities exist. Opportunities for profitable credit use probably exist for some farmers in all countries, but they may not be widespread. Prior to funding a credit program, care must be taken in both area and target group selection to ensure that the essential investment opportunities are indeed readily and practically available to small farmers.

-- The absence of a new technology, rather than credit, is often the effective constraint on increased production. In other areas, the lack of information on essential marketing, input-supply services, or land distribution may be the major obstacles. A.I.D. programs should be tailored to a given region's problems. If a credit program is to be effective, it may need to be accompanied by one or more other programs or policy changes that address constraints on small-farmer production.

-- Before deciding on the appropriateness of a credit program, consideration should be given to (a) whether local cultural and risk-aversion factors may prevent farmers from responding satisfactorily, and (b) whether adequate funds are already available from existing savings mechanisms or from alternative sources of loan funds, namely the "informal" credit market, at

reasonable terms.

-- Programs with subsidized interest rates or high default rates are sometimes justified as a form of "welfare" transfer to the poor. In general, however, the distribution of such welfare transfers is highly skewed against the small farmer and the landless poor. A.I.D. cannot defend subsidies and defaults from a welfare point of view. Alternative programs in health or education can be more easily targeted, have a higher impact on productivity, and can be provided at a lower per-family cost than the cost of interest subsidies and loan defaults.

-- Existing agricultural credit agencies tend to channel the majority of lending to medium- and large-scale farmers. Even when small farmers are the specific target of a program, they often lose out to larger farmers. A.I.D. projects must ensure that developing country government policies, incentives, and bureaucratic processes do not discriminate against small farmers.

-- With few exceptions, small-farmer credit program costs exceed revenues. If such programs are to continue and expand, institutional revenue must be increased by raising interest rates to levels that reflect real costs while administrative costs and default rates must be lowered.

-- Raising interest rates to market levels has several additional advantages beyond raising more revenue. By making capital more expensive, higher interest rates tend to encourage more labor-intensive techniques, and hence more rural employment. Also, higher interest rates will increase the total supply of loanable funds. That should give small farmers with profitable investment opportunities greater access to credit funds.

-- Weak administration characterizes most credit programs. Good credit programs are invariably decentralized, but more attention must be focused on strengthening credit administration and structuring it more effectively.

-- Credit can be delivered through several different public and private institutional forms. Each mechanism has certain advantages, and none can be considered superior in all situations. Although conditions and timing of credit group formation vary, some kind of group approach seems to be essential to lowering costs through economies of scale to the lender and by increased social pressure of the group on individuals that will reduce default rates. Steps can also be taken to improve the functioning of the informal rural credit markets. This often means that ways need to be devised to have

moneylenders more effectively meet productive, local credit needs.

-- Efforts also need to be launched to better link rural savings and credit. This may mean that a savings program should be linked to credit programs.

On the question of agriculture credit subsidies, recent A.I.D. guidelines{4} have further defined A.I.D. policies:

A.I.D. has found that LDC [less developed country government pricing and subsidy policies often result in substantial reductions in efficiency and productivity. Such policies usually offer little or no benefit to the disadvantaged groups they are supposed to help. In many cases, the benefits of such policies do not redound to low-income groups, but instead go to relatively well-off groups. A.I.D. policy is to minimize LDC governmental price and interest rate interventions. It is A.I.D. policy to encourage the freeing of agricultural input and output prices. The freeing of price controls eliminates the need to introduce further compensating subsidies/controls which can only compound market inefficiencies.

A.I.D. recognizes that there may be a need to temporarily subsidize the experimental use of agricultural inputs. However, prices should not be set below the farmer's willingness to pay for new inputs and should be increased to market levels by the end of the project.

The primary purpose of a country's financial institutions should be to mobilize and to allocate private indigenous financial resources. Interest rate controls prevent financial institutions from doing this efficiently. Savers respond to higher real interest rates by increasing deposits in financial institutions. Further, farmers are willing to pay interest rates charged in unregulated markets when profitable investments are available and credit and repayment are scheduled conveniently. However, controls that artificially hold interest rates down discourage savings and lead to credit rationing which often excludes small borrowers that some programs were intended to help. Furthermore, regulated rates are sometimes below the rate of inflation. Negative real interest rates contribute to the decapitalization of financial institutions.

Therefore, interest rates should be set according to the market demand for funds, so that as much resources will be mobilized as the economy's borrowers are willing to pay for. One condition for support from A.I.D. to or through financial institutions is that interest rates be set according to these principles or that

> substantial measures be taken to reduce interest-rate controls where they have adverse affects on mobilization and allocation of funds. A.I.D. is prepared to assist the development of innovative institutional approaches to meeting the credit needs of small farmers and other small enterprises in ways that do not distort the price of credit.

A.I.D.'s policy focus on agricultural prices and interest rates was well summarized in the recently issued "Policy Dialogue Checklist":{5}

> LDC governments need to assure market responsive prices to provide greater incentives for increased agricultural production. Government regulated, low farmgate prices constitute a heavy, discriminatory tax on farm families.
>
> Effective agricultural credit programs require positive real interest rates and a major focus on loan repayment to assure economic, rather than political, allocation of credit and to avoid decapitalization. Positive real interest rates also stimulate savings mobilization, which makes more resources available for productive investment.

{3} U.S. Agency for International Development, "Guidelines on Project and Program Planning for Small Farmer Credit," A.I.D. Airgram message to field Missions, A-418 of June 6, 1974.

{4} U.S. Agency for International Development, Pricing, Subsidies, and Related Policies in Food and Agriculture, Policy Paper (Washington, D.C.: A.I.D., 1982).

{5} U.S. Department of State, "Policy Dialogue Checklist," State Cable 045804 of February 14, 1985.

4. DIMENSIONS OF THE CREDIT PROBLEM

4.1 Credit Availability

Access to credit varies greatly among and within developing countries. In Taiwan, since the early l970s, nearly all farmers have had access to institutional credit. An extensive system of rural cooperatives and other financial organizations effectively mobilizes savings and provides farm credit. At the other extreme, in many African countries less than 1 percent of the farmers use institutional credit. On a geographic basis, the World Bank estimates that about 5 percent of farmers in Africa receive institutional credit, whereas in Latin America and Asia the coverage is around 15 percent.

In the case of small farmers, coverage by institutions is even more limited. In almost all countries, institutions have channeled their funds to the larger farmers. World Bank estimates for Pakistan, the Philippines, Thailand, Tunisia, and Bolivia show that 5-10 percent of the farmers receive 70-80 percent of institutional credit.{6}

In sum, only a relatively small fraction of farmers receive institutional credit. The majority do not borrow but if they do borrow, it is from moneylenders or friends and relatives. Although institutional credit is growing, noninstitutional sources are the main source for most farmers. For small farmers in most countries, formal institutional credit is just not available.

In traditional agriculture, with a stagnant technology, the output of farmers is stable or expanding slowly, and investment is low. Farmers generally have enough capital to meet their needs, given their present technology and size of land-holdings. Although some farmers are always living on the margin and borrowing to meet current needs, most are not. Most farmers borrow only when their crop has been poor or when they face unusual expenditures, such as a religious or family ceremony (birth, wedding, or death). Much of the borrowing is from other farmers, neighbors, friends, and relatives. They charge no interest or a nominal rate and expect comparable financing when they themselves need credit.

Developing country capital markets are fragmented between the urban sector, which receives financial services from urbanbased institutions, and the rural sector, which receives financial services from rural-based, informal sources. The last three decades have seen a considerable growth of agricultural credit institutions along with increased public funding. These institutions, in general, have followed a low interest rate policy that has precluded the expansion of private institutional credit agencies into the rural area, required rationing to meet the excess demand for credit, and has perpetuated capital market dualism in rural areas. Consequently, financial services to farmers continue to be less than adequate.

In most developing countries the informal credit market is the largest source of funds for small farmers. The noncommercial, informal market consists of loans provided by relatives and friends. The commercial sector consists of loans provided by local merchants, larger farmers, and full-time moneylenders.

Two very real advantages held by the village moneylender are speed of response and reduced inconvenience. The moneylender knows the local farmers and has met their needs for many years. Compared with the moneylender, the farmer who deals with a formal credit institution faces high transactions costs. These include waiting in lines, repeated trips to the lender, exhaustive forms to complete, bribes, restrictions on the use of loan funds,

application and monitoring requirements that insult the borrower's pride, and, quite often, late receipt of loan funds. Whereas many of these items do not involve a cash outlay, they do represent a real cost to the borrower in time and inconvenience.

The informal lender's operation is usually limited to one village. This provides an advantage over urban-based credit institutions in selecting borrowers, loan response time, enforcing repayment, adjusting loan terms, and lower administrative costs. However, these are often barriers to entry for other moneylenders, which reduces competition. The informal sector is ineffective at mobilizing savings, provides no technical services, provides loans mainly for consumption, and has little interest in channeling loans into large, new technology investments. In addition, the moneylender is often a wealthy member of a religious or ethnic minority and so can become the subject of hostility because of so-called high interest charges and associated practices (such as hidden charges).

There are variations among countries and regions in terms of the importance of different informal lenders. World Bank data{7} suggest that in Latin America, credit supplied by commercial lenders and public institutions may be more important than loans from relatives and friends. In contrast, in Africa credit from relatives and friends appears to be the most important. In Asia the village moneylender/merchant seems to be a more important figure.

Generalizations about the informal credit market are difficult because few records of financial transactions are kept. The Spring Review of 1973 concluded that informal lenders supply most of the credit in rural capital markets and further stated:{8}

> It appears possible that most small farmers obtain more funds for production from their own savings, or from sale of their assets, than from either lending institutions or informal commercial lenders; and when such savings are supplemented by loans from relatives and friends the main source of such funds is still small farmer savings.

Whatever the goals of development, they must include an effort to mobilize national savings for improved resource allo-cation and investments. Village moneylenders lend from their own funds. They do not mobilize savings from the rural areas. In that sense, the informal money market is failing as a financial intermediary. It is not collecting resources and directing them to the most productive uses.

{6} World Bank, "Agricultural Credit Sector Policy Paper" (Washington, D.C.: World Bank, May 1975).

{7} Ibid.

{8} Gordon Donald, Credit for Small Farmers in Developing Countries (Boulder, Colorado: Westview Press, 1976).

4.2 The "Need" for Credit

Agriculture played a key role in the economic development of nearly all of the countries that are now considered developed. Central to that development was increased agricultural output generated from improvements in agricultural technology. Fewer and fewer farmers were able to produce more and more food.

The "Green Revolution" of the l960s showed that agricultural modernization was possible in many developing countries. As farmers started using new seeds, fertilizer, irrigation, and other improved practices, yields increased dramatically. However, the Green Revolution only took hold in a few developing countries and only for a few cereal crops. Many efforts were launched to extend the pace of agricultural development to other crops and countries; credit was often a part of those efforts.

One reason for the emphasis on credit was the assumption that access to credit was a critical constraint to the adoption of improved inputs and modern technologies. Modernizing agriculture requires large infusions of credit to finance the use of purchased inputs such as fertilizer, improved seeds, insecticides, additional labor, etc. Because savings in traditional agriculture tend to be relatively small at the initial stages of development, increased demand for working and fixed capital must largely come from an increased supply of credit. Small farmers have meager internal resources and, therefore, are most in need of production credit.

Although there was a need for credit, there was also a concern that the credit not be wasted. If it was to be effective, it would have to be tied to a new technology that could boost a smallholder's productivity sufficiently to generate repayment and stimulate commercial farming for the market.

4.3 Results of the "Need" Approach

The analysis of A.I.D. credit projects in this study showed that whereas many projects identified a credit "need," they were often unable to translate meeting that need into productive output. Credit was provided to farmers, but agriculture production did not always increase.

The problem is that credit (that is, money) can by itself grow nothing. To expand production, borrowed funds must be spent by farmers on physical inputs. The surplus output must then be transported to market and sold. This is a complex process.

Credit provides farmers with funds that can be used to purchase productive inputs. Whether this will be done, however, depends on the farmers' sociocultural attitudes and such factors as technology, markets, infrastructure, and service institutions.

A rural development approach based on extending new technology and credit can be termed a "supply-led" or pump-priming approach. Small-farmer development is seen as a method of pushing new technologies and inputs to encourage production and increased income. Such a supply-push approach was most often used in lower income countries that lacked adequate agricultural institutions and improved agricultural technology. The lack of institutions and technology were often the undoing of A.I.D. credit projects.

On the technology side, we have found that the lack of a suitable technology package, input supply, and markets was more of a problem than the lack of formal capital markets. It is clear from our analysis that appropriate technology and marketing services are a necessary precondition to any production credit program.

The level of economic development is also important. The study found that for poorer developing countries, particularly in Africa, credit projects had a difficult time. In addition to the level of institutional development, there was the problem of dealing with subsistence farmers. Farmers who were barely in the money economy and unfamiliar with new technology were poor credit risks. It takes great managerial skill to budget cash and to apply new technology. In such cases, supply-push projects faced a formidable set of problems.

Projects that relied on more of a "demand-pull" approach were more successful. In such cases the institutional and service support system was more developed. Farming was more monetized, the input delivery system worked reasonably well, farmers had accumulated reasonable managerial expertise, and there was a local organization in place to handle crop marketing and loan supervision. In such cases, credit became one of the "accelerators," most useful once the transition to more commercialized farming was underway. It appears that the farther one locates a credit program down the ladder toward subsistence farming, the higher the risks. Credit programs for subsistence farmers require a large component of training, institutional development, and support services and infrastructure. Without such support, credit programs aimed at subsistence farmers become very risky.

4.4 Rural Resource Mobilization

Over the last 10 years, A.I.D. has funded research and pilot projects designed to mobilize rural savings and to provide rural loans. These efforts differ from more traditional rural credit projects, which generally lacked a savings component and

concentrated on providing loans to small farmers. The rural resource mobilization (RRM) approach has the same ultimate objective as traditional approaches: to increase the availability of capital in rural areas to improve the economic prospects of the rural poor. The traditional approaches use external funds to provide loans, often at subsidized interest rates. In contrast, the new RRM approach is designed to mobilize rural savings and use those funds to provide loans. By using higher free market rates of interest (instead of the artificially low rates used in many traditional projects), RRM is able to encourage more savings, give rural savers a good return on their savings, and provide a much greater and sustained level of lending.

Proponents of the RRM approach stress that it will avoid many of the problems associated with traditional projects, which are as follows:

Limited availability of credit. No donor or developing country government has the resources to provide loans to all small farmers. Projects usually have to ration credit and the rural poor often lose out.

High transactions cost for both lenders and borrowers. The process of targeting credit (to be sure that it reaches small farmers) is expensive.

Widespread incidence of arrears in loan repayment

Serious weakening of financial institutions serving rural areas

Skewed distribution of credit benefits away from the rural poor

In recent years A.I.D. has implemented RRM projects that emphasize savings mobilization -- BANCOOP in Peru, the Rural Savings Project in the Dominican Republic, and the Rural Finance Project in Bangladesh. Although those projects have not been operating long enough to judge them as fully successful, they do appear to be making important contributions. The Rural Resource Mobilization Project of A.I.D.'s Bureau of Science and Technology/Office of Rural and Institutional Development groups those benefits into four areas, which are developed in the four subsections that follow.

4.4.1 Income Distribution

Low interest rates create an excess demand for credit, thereby forcing financial institutions to ration credit. Small borrowers, without traditional collateral, are seen as too risky and too costly to serve. Such rationing consists not only in loan refusals but also in increased costs for small borrowers (e.g., time spent waiting in lines, filling out exhaustive forms,

bribes).

An essential feature of financial intermediaries is the pooling of resources--bringing together relatively small amounts from many savers so that relatively large projects involving economies of scale can be undertaken. Financial intermediaries by their very nature serve more savers than borrowers. If the objective is to help the rural poor, policies need to focus on improving services for savers, not for borrowers. That means creating a desirable and profitable savings mechanism for small savers.

4.4.2 Resource Mobilization

Effective savings mobilization draws resources away from unproductive investments, especially inflation hedges, and into deposits that earn positive real rates of interest. These resources can be lent by financial intermediaries for those activities that provide the highest rates of return. Thus, savings mobilization can improve resource allocation and thereby allow low-income developing countries to grow more rapidly.

4.4.3 Viability of Financial Institutions

Financial institutions that neglect savings mobilization are not doing a complete job. Not only are they failing to provide adequate service to rural savers, but they are also making themselves less viable. This can be seen in the high rates of delinquency and default that plague many agricultural development banks. Furthermore, borrowers are more likely to repay promptly and lenders to take responsibility for loan recovery when they know that resources come from neighbors rather than from some distant government agency or international donor. Financial institutions that mobilize savings effectively are also likely to have a continual flow of resources available for lending. Those that neglect savings are inevitably subject to the feast-or-famine cycle of government and donor projects. Another factor is that belief in the future availability of loans can be a strong incentive for borrowers to repay their loans promptly.

4.4.4 Appropriate Incentives for Projects

Financial institutions are likely to have little interest in savings mobilization or loan recoveries when cheap funds are available through government loans or from international donors. Clearly, the volume of resources that can be obtained through effective programs of savings mobilization and active loan recoveries are far greater than the amount of subsidized aid available from developing country governments and donors. Thus, savings mobilization provides a strong incentive and discipline

not only for rural financial institutions but also for developing country governments and donors.

A.I.D.'s new approach to credit -- the use of financial institutions that both provide loans and mobilize rural resources -- appears to offer an effective and self-sustaining approach to rural development. There has not been enough time to thoroughly judge the effectiveness of the rural resource mobilization approach. Although it looks promising, there are some questions.

Technology and Supporting Services. As with the traditional approach, before small farmers can invest, they must have a profitable technology. If improved agricultural technology is not available, farmers (and lenders) will have the same problems they have with a traditional credit project. The lack of an appropriate technology was a major problem for traditional projects and may also be a problem for RRM projects. The same would apply to such supporting services as agricultural extension, agricultural input supply, and crop marketing. If those services are unavailable, farmers will have a hard time increasing their agricultural output.

Targeting. Aid donors are interested in improving the welfare of the rural poor. Traditional credit projects are designed to provide capital to a target group of small farmers. Although there have been many problems with assuring that benefits actually reach small farmers, the nontargeted approach used in RRM may also present problems. A.I.D. needs to demonstrate that it is improving the economic welfare of small farmers. If RRM cannot show that it is reaching small farmers, it will have problems with the Congress.

Administrative Problems. Many traditional credit projects fail because of poor administration, accounting, and loan management procedures. A lack of technical skills and operation and maintenance problems plague all development projects. RRM projects will have to face the same difficulties as traditional credit projects.

Increasing Agricultural Production. RRM projects have proven very effective at collecting rural savings, but what these projects do with the savings deserves attention. RRM projects provide loans (at high market rates of interest) to those who can use capital most efficiently. If the most profitable investments prove to be in trade, transportation, and industry, that is where the capital will go. RRM projects may move capital from agricultural areas to fund rural small enterprises or to fund urban, nonagricultural investments. That can create problems for donors like A.I.D., who wish to see increased small farmer agricultural investments.

5. CREDIT POLICIES -- A CREDIT ISSUES CHECKLIST

Before discussing credit issues and policies, it might be useful to cite the other sections of this paper that deal with credit issues. The statistical analyses (summarized in Appendix G) identify critical project components that affected project success. That appendix was used in preparing the winner's profile of Section 2. Appendix B provides further background on factors affecting project success. As a further aid to project designers, Appendix C provides a short credit issues checklist.

Credit policies have been grouped into three categories: macro issues, financial policies, and credit delivery. Subissues are examined under each category. The presentation for each subissue starts with a discussion of the problem, followed by a summary of the findings of this study and then by a list of lessons learned or recommendations. The three major policy areas are as follows:

The broad, macro issues that have to do with overall project structure and economic factors external to the project. These include GNP level, agricultural technology, government policies, inflation, and resource mobilization.

Financial policies are the nuts and bolts of project structure. If they are appropriate, the project should be financially viable. Included are interest rates, beneficiary targeting, lending criteria, and loan collateral.

Credit delivery covers the institutional arrangements used to provide loans. This includes the type of institution used, loan extension and monitoring practices, and credit in-kind.

5.1 Broad Macro Issues

5.1.1 Technology

There must be a way for farmers to invest credit productively. In fact, appropriate technology is a critical precondition for the success of any credit project. If a suitable technology (along with supporting services such as inputs, extension, and produce marketing) is unavailable, then it makes little sense to start a credit project. Surprisingly, in the original design of 20 percent of the projects, there was little or no mention of agricultural technology. In most of those cases it was assumed that profitable small-farmer investments did exist, which may have been an extreme assumption.

Although projects that failed often had multiple flaws, lack of an appropriate technology and inadequate supporting services were major problems. Technology was not a problem in any of the successful projects. However, the absence of an appropriate technology was a problem in 78 percent of the unsuccessful projects. For example, in the Haiti Small-Farmer Development

Project and Bolivia Agricultural Development Sector I, there was no improved technology appropriate to the needs of the projects' small farmers. Lack of supporting services consistently separated the good projects from the failures. In all of the successful projects, supporting services were appropriate. In all of the failures, they were not. In projects that failed, technology and supporting services did not exist or were woefully inadequate, with the following specific problems:

Expected yields were well below anticipated levels.

Improved seed, fertilizer, and extension services were not available in a timely manner.

Crop prices and marketing arrangements did not meet expectations.

In the Mali Action Ble, the Upper Volta Fardo Ord, and the Niger Niamey Development Department projects, yields and farm income were well below expectations. For example, in the Niger project the rate of return achieved by farmers in good years was only 17 percent. In bad crop years it was 2 percent. Such a low rate of return and the fact that every third year was a bad year meant that farmers could not generate a return high enough to cover the cost of purchased inputs. It made more sense to use the traditional, unimproved technology that required few purchased inputs and yielded a more assured return.

The lesson is clear; before considering a credit program, the following questions must be answered:

-- Does an improved technology exist that is appropriate to small farmer needs?

-- Has the technology proven successful, off the research farm, on actual farmer plots for two or more seasons?

-- Is the rate of return from the new technology great enough to ensure clear profitability (i.e., a more than 20-percent return on investment); is it great enough to cover the climatic and other risks that the farmer faces?

-- Are supporting services and inputs available and dependable enough to support the new technology?

5.1.2 Development Level of the Developing Country

The structure of all assistance projects (whether in developing country agriculture, education, health, or credit) reflect the unique setting in which they operate. Although each developing country is different, there are some common characteristics. Lower income developing countries, by their

nature, differ from higher income developing countries. They generally have a lower level of institutional development and a poorer resource base. Only 13 percent of the successful credit projects were in countries on the UN List of Least Developed Countries. Of failed projects, 47 percent were in the least developed countries. Because project success is directly related to a country's level of development, project planners must recognize the handicaps that projects face in low-income countries.

Credit projects in low-income countries (particularly in Sub-Saharan Africa) generally included a large institutional development component. They had to create institutions because, quite often, none existed. Not only did they have to develop a financial institution (a bank or co-op), but they often included a major agricultural technology extension effort. The technology portion typically included promotion of improved agronomic practices along with a related service component (input supply, extension, and output marketing).

A full service approach was used because the project designers determined that the developing country lacked the institutional structure necessary for agricultural modernization. The study found that 75 percent of the credit projects in the least developed countries were tied to a specific technology and supporting services.

In middle-income developing countries (particularly in Latin America) the institutional structure was generally more developed. Existing financial institutions were already providing some services to the rural sector. In addition, agricultural supplies were readily available from existing private sector or government agencies. In such countries there were still problems. Financial and agricultural service institutions were often more attuned to the needs of larger farmers and urban interests. They were not oriented toward the technology and services appropriate to the needs of small farmers. In addition, well-to-do farmers were often able to "capture" projects and draw the benefits away from A.I.D.'s target beneficiaries. For example, in the Bolivia Small Farmer Project, better-off members gained control of the co-ops, and project funds were used largely for land clearing, tractors, and other equipment of benefit to those with large landholdings.

As discussed in Section 5.3.1, credit projects that relied on existing developing country institutions had the best chance of succeeding. In low-income countries that was usually not the case. In those countries, projects had to create new institutions and service-support functions, which placed a heavy burden on the project. Although the financial institution was often weak, there were also problems with the agricultural technology and related services. There were, of course, exceptions to this low-income problem. In Bangladesh (a least developed country) years of donor effort had built a fairly respectable financial and agricultural services system. A.I.D.'s credit program was able to build on that base and use existing

institutions most effectively.

Lessons in these cases are as follows:

-- If credit projects are to succeed in low-income countries, they must recognize the need for an extensive and possibly long-term institutional development effort. In the absence of the supporting structure, credit programs will fail.

-- In middle-income countries an institutional structure may already exist, but it often fails to serve the needs of the smaller farmer. In such a case the project needs to ensure that services are directed toward the target population.

5.1.3 Integrated Agricultural Development Versus Credit-Only Programs

The idea of integrated rural development or integrated agricultural development grew naturally from an awareness of the many components of rural development and their interrelationships. Because the causes of rural poverty are multiple and interdependent, they must be addressed simultaneously in many sectors. Rural development needs to confront problems in a variety of sectors, from credit and marketing to health and education. Consequently, development planners have looked for ways to attack simultaneously many of the causes of rural poverty. The result was projects that were both multisectoral and multifunctional.

However, integrated rural development projects are often too ambitious in scope to be successful. Because these projects are multisectoral and multifunctional, they are extremely difficult to implement. The lack of coordination between the various ministries involved is probably the major contributing factor to the failure of these kinds of projects. Operation Mils-Mopti in Mali was terminated because of such poor implementation. The project was to provide agricultural implements and inputs to small farmers on an in-kind credit basis, assist in the repair and improvement of certain priority roads, improve the village well, and train and equip blacksmiths. The final audit for Operation Mils-Mopti reports that the project was overly complex and ambitious, hampering any chance for success. Moreover, in such projects, the credit component often does not receive the attention it deserves in the design and implementation stages.

Whereas only 14 percent of the projects in this study were part of an integrated rural development effort, 80 percent of the projects tied credit to a technology package. Using the lessons learned from another A.I.D. study,{9} the following recommendations can be made.

Agricultural input programs must provide farmers with inputs that are appropriate. Many programs have introduced

technologies that were too advanced for the farmers' resources and knowledge base, not profitable under the farmers' own conditions, or too complicated for the local system of transportation and communication to support.

Delivery of agricultural inputs must be timely. Many inputs must be completely written off if they are unavailable at the proper time in the season. Concern about this possibility of failure may inhibit farmers from experimenting with new inputs, even when delivery problems have been resolved.

Utilization of the inputs must result in a marketable, profitable product for the farmer. This credit study found that the major constraint to these technology package projects is the appropriateness of the agricultural inputs.

Examples abound of the failure to consider these lessons. In Niger, the Niamey Development Project discovered well into the implementation stage that the technology package was not appropriate. Yields were far below expectations, and the rate of return was not great enough to justify costs or risks. The Tanzania Resources for Village Production and Income Project proposed to increase rural production and income by strengthening rural delivery systems for production of goods and services to villages. However, a shortage of production inputs contributed to the failure of the project. The Small Farmer Development Project in Haiti failed because an improved agricultural technology did not exist. Similarly, Action Ble in Mali, the Fada Ord Project in Upper Volta, and the Liberia Area Development Project did not sufficiently increase yields. There simply was no proven technology package that could be recommended to small farmers. For the Rural Development Project in Guatemala, there was a lack of appropriate research in beans (the most important crop), and yields declined.

Only 20 percent of the projects reviewed for this study were credit-only programs. Just as when credit is tied to a package, in credit-only projects, some profitable use for the credit must also exist. Credit, that is, money, can by itself grow nothing. To expand production, borrowed funds must be spent by farmers on physical inputs -- fertilizer, seed, pesticides, and labor. The surplus output must then be transported to market and sold to domestic or foreign consumers. This is a complex process. Credit provides funds to small farmers that can be used to purchase productive inputs, but whether this will be done or not depends on the existing technology, markets, infrastructure, information, and attitudes. Although a credit-only project may face such problems, credit-only projects were generally the successful projects. Only one credit-only project was a failure.

One argument for credit-only projects focuses on simplicity. Judith Tendler{10} notes that credit unions are often more successful than cooperative federations because they "concentrate

on a single task, credit; the task is not as difficult as some of those undertaken by agricultural coops and their federations, like marketing; the task is not as dependent on coop behavior as are the activities of agricultural coops; the local credit union does not require farmer participation in decision making to function properly."

The lessons in this case are as follows:

-- Development requires actions on many interrelated and interdependent factors.

-- Credit can be one component of an integrated approach or it can be a separate project. Project integration makes little difference to project success.

-- Although in theory an integrated approach should be the best means of attacking interrelated problems, that is not always the case.

-- An integrated approach requires personnel and administrative skills that may be beyond the capacity of many developing countries. Discrete, more manageable projects allow concentration on one set of problems. A credit-only project works as long as the other problems are taken care of in other projects.

-- The key is to ensure that all of the problems are addressed. It makes little difference whether this is done in one project or many.

-- There are clear benefits to an integrated project and to specialized projects. A separate credit project will work as long as the other constraints are covered elsewhere. An integrated rural development project will also work if all constraints are covered.

{9} U.S. Agency for International Development, Agricultural Credit, Input, and Marketing Services: Lessons from A.I.D.'s Project Experience -- An Introductory Review, A.I.D. Program Evaluation Report No. 18 (Washington, D.C.: A.I.D., 1985), p. 18.

{10} Judith Tendler, The Trouble with Goals of Small-Farmer Credit Programs (Berkeley, California: University of California, 1976).

5.1.4 Government Policies, Regulations, and Controls

Developing country government policies often discriminate against the rural sector. For example, if a government has a policy of cheap food for urban consumers, high taxes on export crops, cheap capital, high minimum wages, and an overvalued foreign exchange rate, there may be serious problems with any attempt to encourage increased agricultural production.

Appropriate policies are a precondition for the adoption of improved technology and the related use of credit.

Surprisingly enough, evaluations of credit projects rarely mentioned government policies (other than interest rate controls) as an impediment to project success. We suspect that inappropriate policies did exist, but they were not highlighted by evaluators. (Section 5.2.1 discusses government interest rate ceilings.)

There were problems with government legal and administrative regulations in a few cases. An extreme example would be the Niger Cereals Production Project. The project planned to use cooperatives for credit and extension services. The problem was that co-ops had no legal standing in Niger. They could not borrow, collect savings, finance construction, or purchase equipment or goods in their own names. A legal change was required before the project could move ahead.

Another example was the "cheap credit" component of the Jamaica Integrated Rural Development Project. Even with a 6-percent interest rate, small farmers refused to take loans. Government price controls made it unprofitable to invest in farming.

Another problem faced by nearly half of the projects was an unstable economic/political situation. Typical difficulties included coups d'etat and other changes in government, ministerial reorganizations, loss of export markets, and rampant inflation. All development projects have to face such problems, and credit projects fared no worse than other projects.

5.1.5 Inflation

In longer term perspective (particularly including the period prior to 1973) inflation has been relatively moderate in most developing countries. Although some developing countries (mainly in Latin America) have used the printing press to churn out more and more money, most have not. The striking fact is that prior to l973, most developing country finance ministers operated very conservatively, with limited use of deficit financing. That all changed in l973. Prior to l973, developing country inflation averaged 3 percent a year. After l973 it averaged 12 percent.

The first oil shock of l973 quadrupled the price of oil. Faced with the need to institute major economic structural changes, many developing countries followed a highly inflationary course. With the second oil shock of 1979, inflationary forces accelerated. In the last decade, inflation has been a serious problem in nearly every developing country. It has threatened the viability of developing country financial institutions and many donor credit projects.

If loan terms do not reflect inflation rates and if inflation

rates are high, a lending institution will steadily lose capital. Even if an institution is recovering its loans, if it is being repaid in a rapidly depreciating currency it cannot long survive. Most credit projects in this study lacked a mechanism to protect against inflation. The lack of an "inflation guard" may have reflected the experience of the l960s when inflation was not a serious problem. Projects designed in the early l970s had not yet recognized the problem.

Many projects did not become financially viable, partly because of inflation. However, only 12 percent of the project evaluations cited inflation as a problem. It is unclear why inflation was not recognized as a problem. Whatever the reason, future credit projects must protect against inflation. If they fail to provide an inflation guard, their capital base will be rapidly eroded.

There are two ways a credit project can insulate itself from inflation: by indexing or by shifting repayment to real goods. Tying interest and loan repayments to an inflation index is starting to be understood by borrowers in monetized economies. From the borrowers' perspective, it is an uncertain process because they are never exactly sure what their repayment obligations will be.

With indexing, loan repayments are tied to an inflation index such as the wholesale or consumer price index. That may be fine for the lender but not for rural borrowers if the index fails to accurately reflect how inflation changes the borrower's income. If a rice farmer's crop prices do not increase as fast as the index, the farmer will be in a bind. For example, if the loan index increases 50 percent and the price of rice increases only 10 percent, the farmer will only have 10 percent more income to service a debt that has increased by 50 percent. Small farmers, who are barely in the money economy, may find a commodity or real goods loan easier to understand.

In the Chile Mapuche Livestock Development Project, credit for dairy cows was denominated in livestock not currency. Farmers received loans that were expressed as so many cows. They paid interest and repaid the loan by delivering cattle to the lender. In Bolivia, the non-A.I.D. FINCA project denominated loans in potatoes. A farmer received a variety of inputs that were valued at current potato market prices. For example, a loan might be valued at 100 potatoes. At the end of the loan period, the farmer was required to repay 120 potatoes. In the Niger Cereals Project, farmers received 1 kilogram of millet seed and had to repay 2 kilograms of millet at harvest.

The use of agricultural goods provides an easily understood basis for small farmers to service their loans. It also protects the lender against the uncertainty of depreciating currency values. In addition, the farmer may already be borrowing with repayment denominated on a commodity basis. The village merchant or moneylender who provides informal credit to small farmers usually figures the repayment obligation in terms of commodities

(e.g., repayment will be so many bags of paddy or maize).

5.1.6 Rural Resource Mobilization

A.I.D. has supported rural resource mobilization (RRM) projects in Bangladesh, the Dominican Republic, and Peru. RRM objectives and approaches differ sharply from those used in more traditional credit projects. The Bangladesh Rural Finance Project is a good example of the RRM approach.

The Bangladesh project builds on the work of an earlier $7 million experimental project that tested various lending rates (from 12-36 percent) and eight alternative lending methods. The project determined that a lending rate of 25 percent and savings rates of 14-15 percent would be economically viable. Based on the results of the experimental project, a $75 million follow-on project was launched in l983. It was designed to develop a self-sustaining system of rural finance that would mobilize savings and provide credit to farmers and small entrepreneurs.

Project funding is divided into a series of tranches; after the first tranche, succeeding tranches are disbursed on the basis of satisfactory progress in implementing policy and institutional reforms. This "performance disbursement approach" is a new and innovative technique that uses aid funds to encourage reform (i.e., the project purchases a package of mutually reinforcing policy and institutional reforms). Although the major policy thrust is the elimination of government-subsidized credit, there are three project components:

1. Interest Rate Rationalization. Loan rates are to be increased to 24 percent and savings rates to 14-15 percent. Those rates were set as targets to be worked toward during the course of the project. To ensure that the proper linkage among interest rates is maintained, an Advisory Committee on Interest Rates will periodically review the rate structure and make adjustments based on current conditions.

2. Rural Savings Mobilization. The project included market research of savers' attitudes, promotional savings campaigns, advertising, and a relaxation of savings restrictions (e.g., minimum deposit requirements).

3. Loan Recovery. To improve loan recovery, the following actions are being taken: (a) a study of banking, legal, political, and sociological factors affecting loan recoveries; (b) a system of reserves for classified loans and for writing off bad debts; (c) improved accounting systems to better track overdue loans and interest accrued on those loans; (d) increased penalties on overdue loans; and (e) training and technical assistance to improve lending procedures, branch staffing, legal pro-cedures, accounting, and bank

inspections.

What makes this project unique (in addition to the use of market research and advertising campaigns) is the emphasis on policy reforms. Project success is measured against plans to implement policy changes and to effect institutional improvements. Project disbursements are only made when specific policy actions have been taken.

While the project concentrates on eliminating interest subsidies, it also includes a major effort to encourage savings and to improve loan administration. It aims to correct the three major failings of most credit projects: (1) a lending rate that is too low, (2) failure to mobilize domestic resources, and (3) poor administration (creditworthiness appraisal, loan monitoring/ collection, and bookkeeping). If RRM projects like the one in Bangladesh prove successful, it will greatly support efforts to modernize developing country rural economies.

5.2 Financial Policies

5.2.1 Interest Rates and Interest Subsidies

The Cost of Credit. In theory, because farmers are expected to profit personally from their on-farm investments, they should pay the full capital costs of those investments. Although there may be an "infant industry" or "national food self-sufficiency" argument for encouraging the adoption of new agricultural technology and creating new lending programs, any subsidy has to be time limited. A financial institution, like any other business, cannot buy high and sell low. It will rapidly exhaust its capital base if it does not cover its lending costs. Those costs would include the following:

-- The Opportunity Cost of Capital. This represents the foregone opportunity costs of using funds for agricultural credit rather than for other programs. Estimates of developing country opportunity costs for capital are seldom less than 10 percent in real terms (excluding inflation).

-- The Costs of Administering Credit. The World Bank "Agricultural Credit Sector Policy Paper" estimates that an efficient institution making medium- and long-term loans to large farmers can operate at an administrative cost of 3 percent of its total portfolio. Costs are quite different for small-farmer loan programs. Administrative costs rise as the size of loans fall, as loan maturity shortens, and as accounting and monitoring services rise to cope with many small farmers. This study found that efficient small-farmer credit institutions had administrative costs that ranged from 5 to 10 percent of their total portfolio.

-- The Costs of Risks and Defaults. The more carefully loans are supervised and delinquencies pursued, the lower the default rate. Although delinquency rates of 10-20 percent are high, most loans are eventually recovered. Default rates are much lower than delinquency rates. The limited evidence from this study shows that efficient operations should have a default rate of 2-5 percent.

In sum, the total real costs for an efficient institution should be between 17 percent and 25 percent. If inflation is running at even 10 percent, the nominal costs of lending to small farmers would be in the range of 27-35 percent. This range of interest rates is substantially higher than found in the cases examined. There was considerable variation among countries and institutions, with nominal interest rates ranging from 3 percent to 36 percent. The bulk of the institutions charged an interest rate of 6-12 percent.

Using a 10-percent inflation rate, the nominal cost of lending should be somewhere between 27 percent and 35 percent. With most lending programs charging a nominal rate of 6-12 percent, real rates are in fact negative. The farmers lucky enough to get credit are not paying the true cost of that credit.

Selection of an Interest Rate. The l973 Spring Review of Small Farmer Credit closely examined the issue of interest rate subsidies. The review came out quite strongly against interest subsidies and in favor of moving lending rates toward market rates. Given that background, it is surprising that post-l973 A.I.D. projects still included a substantial interest subsidy. An examination of project documentation showed little evidence that the interest rate issue had been analyzed and no clear indication of why a specific rate had been chosen. In most cases, the developing country already had an established set of interest rates that, for political reasons, were low. It would appear that project planners used those rates when they set project lending rates.

Developing country interest rates, like the prices of many other resources, were often at odds with economic reality. However, it could be argued that an individual project, focused on a small part of an economy, is not a good vehicle for instituting macroeconomic policy changes. Such changes belong more in the field of policy dialogue, carried out by A.I.D. and other donors at a much higher level. Still, there were A.I.D. projects that were able to influence interest rate policies.

In recent years, with A.I.D.'s increased emphasis on policy reform, credit projects have begun to face the interest subsidy issue. In the Egypt Small Farmer Production Project, the A.I.D. Mission negotiated over time to raise project lending rates from Egypt's normal bank rate of 6 percent to 10 percent and

eventually 14 percent. In Bangladesh the Rural Finance Project and its predecessors included an experiment to test interest rates of between 12 percent and 36 percent. The project was able to demonstrate to the Bangladesh Government that agricultural credit could be successful at rates much higher than previously used.

This study's examination of the interest rate issue shows that low interest rates are a major threat to the financial viability of developing country financial institutions. None of the credit projects that failed charged borrowers a free market rate of interest. On the other hand, one-third of the successful projects charged free market rates. Interest subsidies clearly work against project success.

As long as a project can tap donor or developing country concessional funds, it can lend below the opportunity cost of capital. However, if such projects are ever to achieve self-sustaining financial viability, their lending rates must reflect the true cost of capital. In addition, if they raise capital on the local market by paying free market rates to savers and charging market rates to borrowers, they will be operating under a useful management discipline. A lending institution that must live without a donor subsidy must cover its costs. It needs to keep tight controls on administrative expenses and loan defaults.

Based on the projects examined in this study, it is clear that farmers can and will pay market interest rates. When farmers had an appropriate technology available, they could invest profitably even while borrowing at market rates of interest. In fact, farmers in most countries are already borrowing (and repaying loans) to village moneylenders at substantial rates of interest.

Whereas subsidized credit has a detrimental impact on credit institutions, it also has negative effects for farmers. Cheap capital creates resource misallocations and inappropriate investments. It can be effectively argued that cheap credit encourages the substitution of capital for labor. This situation, in turn, may discourage employment in agriculture to the detriment of the rural poor. On the other hand, the Ranis-Fei model suggests that economic transformation occurs only when agriculture is capitalized and excess farm labor is shifted to the industrial sector. It could be argued that subsidized credit plays an important role in encouraging capital intensification.

From another perspective, Philip Raup of Michigan State University has argued that agricultural development is a function of accretionary capital formation, that is, long-term upgrading of herds, building of fences, improving soils, adding farm buildings, and so forth. The extent that subsidized credit assists in this process is unknown. Certainly, the benefit/cost ratio of subsidized rates in this process is unknown. In fact, it has been said that accretionary capital formation played a key role in Brazilian agricultural development. Further, it is

argued that highly subsidized rates facilitated this process. Technology was not the only component in Brazil's development process. Although subsidized rates were costly, Brazil has been one of the real success stories in agricultural development.

5.2.2 Institutional Development{11}

Developing institutional capacity is both the most essential task in a development strategy and the most difficult. Unless institutions are developed, there is little chance for long-term sustainability. In recent years, those in the field of development administration have tried to define a strategy for institutional development. Initially, however, it is important to clarify the relationship between institutions and organizations. Institutions are more encompassing than organizations. They are,"a valued and persistent set of rules that shapes patterns of human behavior and relationships"{12} and hence may be more or less structured or formalized. Organizations, however, are groups consciously established to achieve specific purposes through a division of labor. Thus, a Ministry of Agriculture or an Institute of Public Administration are organizations, whereas extension services and cooperatives are institutions. Institutions may be larger or smaller than organizations; the point is that they are not located within one structure and they tend to be more traditional. Bryant and White observe that football is an American institution; the National Football League, on the other hand, is an organization. Some institutions are of prime importance yet relatively lacking in organizational forms. A development institution is an institution that has the major purpose of contributing to the sustained improvement of the productivity, income, and quality of life of a broad socioeconomic group -- at the local or national level.

The major thrust of institutional development as a strategy is assessing what institutions are available and determining which incentives or inducements might be used to encourage institutions to assume additional roles. These would allow it to incorporate some of the functions of a given development program or project and add to its sustainability. Thus, institutional development strategy involves analyzing the organizations through which projects could be implemented and assessing where, with additional support, greater capacity for implementation might be developed. An institutional development strategy argues for conceiving of projects as opportunities for adding to the overall implementation capability of the country. This is extremely difficult to do because the absence of an institutional capacity is intrinsic to the problem of underdevelopment in the first place.

On the other hand, strengthening an organization does not necessarily mean that one is building an effective development institution. An organization or institution becomes a development institution only when its services becomes highly

valued by the people who are using those services. The indicator of institutional development is when the new organizational and institutional capacities are generated and the community is willing to pay for them.

Hence, the project purposes must necessarily focus on institutional development and financial viability to contribute to sustained improvement in the quality of life of the project beneficiaries. (Sections 5.3.1 and 5.3.2 provide an expanded discussion and project examples.)

{11} The thrust of this section draws from Coralie Bryant and Louise G. White, Managing Rural Development with Small Farmer Participation, (West Hartford, Connecticut: Kumerian Press, 1984).

{12} U.S. Agency for International Development, Institutional Development, Policy Paper (Washington, D.C.: A.I.D., 1982).

5.2.3 Financial Viability: The Key to Self-Sustaining Programs

Development assistance is provided to developing countries to improve the economic productivity of the poor, not as a welfare transfer or charity. To achieve that aim, developing country institutions must develop to the point where they can meet the needs of the poor on a continued and sustained basis.

It is relatively easy to extend loans to small farmers in pilot projects for several years, especially when the government or a donor is willing to fund and subsidize the project. The key issues, however, are whether these projects can be sustained after the subsidy is withdrawn and whether borrowers will repay loans when the pool of loanable funds stops expanding.

A single loan does a small farmer little good. The farmers and others need continued financial services. A donor can never hope to provide all of the resources needed by all small farmers in a developing country.

A steady and dependable flow of financial resources, in contrast, has a good deal of value for the rural poor. The flow of these services -- both deposits and loans -- cannot be sustained if the intermediary does not cover its costs of lending, replace funds lost through defaults, and protect the purchasing power of its portfolio from the ravages of inflation. Ideally, a donor-sponsored project will lay the foundation for an indigenous, self-sustaining program that will expand to meet the needs of more small farmers.

The review of A.I.D. projects showed that many were not financially viable. If concessional donor or developing country funds were removed they would rapidly decapitalize. Costs

greatly exceeded income and there was little immediate prospect of financial solvency. Ironically, an examination of both the original project design and project operations showed that many projects were not structured to reach financial viability. Whereas 90 percent of the projects had institutional development as a goal, only 18 percent included financial viability as a goal. Projects often devoted all of their efforts to achieving aims such as institutional development or technology extension.

Institutional Development. Many projects were designed to create or support developing country cooperatives or credit unions. This was often the case in Africa, where such institutions were weak or nonexistent. They required heavy doses of commodities, capital, expatriate advisers, and training. Villagers needed training in how to set up local credit committees and credit collection mechanisms. Training and equipment were also needed to establish an effective bookkeeping system and a funds-control mechanism. At the end of 5 or more years, many of these projects had created a respectable institutional system. In fact, in many cases the institutional framework was impressive. However, the high personnel and administrative costs meant that financial returns were low. Many of these projects covered only 10-30 percent of their operating costs; overhead costs were way out of line with the revenue base.

The Lesotho Credit Union Development Project is a good example of that approach. There was significant technical assistance and training, which generated rapid growth in co-op membership, the creation of new co-ops, and large increases in savings and loans. However, low interest rates, a loan delinquency rate of 25 percent, and extremely high administrative costs meant that revenues covered only 30 percent of expenses. Without concessional capital it would have been rapidly decapitalized. The Union of Cooperatives Project in Malawi had similar success in encouraging co-op development but failed in reaching financial viability.

Such projects had very long-range development goals. The project planners judged success in terms of "nation building" or "community development." The idea of reaching a financial break-even point quickly was not of major importance. Such projects were generally not financially viable when donor funding ended.

Technology Extension. Similar problems occurred with many of the technology extension projects. The objective was to achieve a rapid increase in agricultural output. Longer run financial viability was of much less importance. Credit projects in Niger, Mali, Upper Volta, and Liberia were fashioned around new (and often untested) technology. The financial system for extending, monitoring, and collecting loans was almost nonexistent. In those cases, the major aim was to encourage farmers to adopt new seeds, fertilizer, or other inputs. The institutional mechanism for financing those inputs (extending and collecting loans) was often an afterthought. Such projects were usually successful in moving loan-financed commodities. However, the lack of an

effective system to collect loans along with poor accounting and inadequate management practices steadily drained financial resources.

The lessons in this area are the following:

-- Before launching a project, planners must make a thorough evaluation of institutional capabilities. Rarely is institutional development not an important requirement.

-- A project should include the training and technical assistance necessary to create a viable developing country institution.

-- Project planners should have a clear and precise timetable, designed to move the project to self-sustaining financial viability.

5.2.4 Lending For Nonagricultural Purposes

Only 20 percent of the projects we studied integrated non-farmers in the same credit scheme with farmers. However, of the successful projects, 40 percent included both farm and nonfarm borrowers. Of the failures, only 11 percent included both categories. The data strongly suggest that including both farmers and nonfarmers helps to create a successful credit project.

The integration of farmer and nonfarmer members in the same credit institution has several strengthening effects. It helps to level the lender's financial flows during the course of the agricultural year because farmers all tend to need loans at the same time, whereas nonfarmers' loan demand is spread more evenly.

A lender needs to balance its loan portfolio to spread its risks. Trade and commercial borrowers provide diversification, compared with a portfolio that includes only agricultural loans. For example, natural calamities may affect farm output and cause the majority of farmers to be late in loan repayments. An urban and/or rural entrepreneurial component could sustain the organization until the farmers become solvent. The integration of farmer and nonfarmer members also provides relatively sophisticated leadership because urban members tend to be better educated.

The Bangladesh Rural Finance Experimental Project tested a variety of credit delivery approaches. It utilized nine financial institutions: six commercial nationalized banks, the agricultural development bank, and two cooperatives. Interest rates ranged from 12 percent to 36 percent. Project evaluators discovered that not only an urban component contributed to project success, but also rural nonagricultural activities, such as rural handicrafts and processing industries. Similarly, this

integration of urban and rural components contributed to the success of the Paraguay Credit Unions Project, the Indonesia Provincial Area Development Project, the Peru Development of Rural Financial Institutions Project, the Cameroon Credit Union Development Project, and the Bolivia Production Credit Guaranty Project.

5.2.5 Keeping Large Farmers From Taking Over the Project

Credit projects that served large farmers were generally more of a financial success then those that concentrated on small farmers. However, if the goal is to reach small farmers and other special beneficiaries, there must be a means to target credit. For example, in various societies women are not allowed to borrow. The same may be true of sharecroppers and minority groups. This means that credit projects may have to make special efforts to target groups that are denied normal access to financial institutions.

Frequently, large farmers exploit credit programs designed for small farmers. In the past, project designs have failed to consider the various advantages that large farmers possess. These include political, material, and socioeconomic advantages.

To prevent large farmers from usurping project benefits, projects must be consciously designed to meet the specific needs of small farmers. First and foremost, for credit to reach small farmers, the project must focus (at least initially) on short-term production credit. The Small Farmer Organization Project in Bolivia effectively excluded small farmers because the project mainly provided longer term credit. Larger loans went to well-off co-op members for capital equipment, land, tractors, land clearing, and implements.

One political advantage that large farmers possess is their traditional access to credit institutions. If we are concerned with small farmer access to credit, project designs must utilize those institutions that favor small farmers, even to the discrimination of larger farmers. The purpose of the Agricultural Credit Project in Kenya was to increase the capability of the Agricultural Finance Corporation's central and field offices to implement and manage effective credit programs to expand credit for Kenyan farmers and ranchers. The Government policy was to make the co-op system the major conduit for small-farmer lending. However, an evaluation summary of the Kenya Agricultural Credit Project complains that only 25 percent of the corporation's loan funds went to small farmers. With some foresight, project planners could have emphasized the Cooperative Bank of Kenya (a co-op society and commercial bank) to address the credit needs of small farmers. The lesson in this case is that a donor's choice of host country institution often determines whether small farmers will actually receive project benefits.

Large farmers also enjoy some material advantages over small farmers that allow them to usurp project benefits. Any project design that liberalizes collateral requirements for small farmers can ease their access to credit (see Section 5.2.8).

Small farmers and tenants are usually penalized by the cumbersome and time-consuming procedures involved in applying for loans. Because they lack the socioeconomic advantages (literacy, language fluency, confidence in dealing with an institution) that larger farmers possess, they are often too intimidated by the lending agencies' rigid procedures for processing loans. These include the completion of complex forms and a preaudit of the borrower; because the small farmer is often illiterate, completing the forms can be a daunting obstacle. Before the loan is issued, an official must visit the farmer's holding, and when the loan is eventually made, the funds and documents have to be collected at the lending institution (which may be far from the farmer's home). The repayment terms often lack the flexibility to accommodate the natural hazards of farmers. There is a need for simplification and flexibility to facilitate ready access to credit. This may only be accomplished by modifying the laws governing credit and by relying more on self-management and policing of individual subloans by groups of farmers who assume responsibility for all their members. Whatever the solutions, it is important that every effort be made to minimize the burden imposed on small farmers. Otherwise, funds will end up flowing to larger farmers.

5.2.6 Efforts To Graduate Beneficiaries to Other Loan Programs

Most of the projects in this study provided subsidies -- credit at below market rates. Rarely was there a plan to eliminate subsidies or to graduate beneficiaries to the commercial market. Although an argument might be made for a subsidy to encourage farmers to adopt new technologies, subsidies cannot be open-ended. Donors and developing country governments lack the resources to continue subsidies indefinitely. In addition, subsidized credit programs provide benefits to only a small part of a developing country's population.

The average credit institution provided loans at an interest rate of 6 percent to 12 percent, whereas the effective cost of funds was 27 percent to 35 percent. A financial institution is like a business. If it is ever to become financially self-sustaining, it cannot continually buy high and sell low. Ideally, credit projects should not include a subsidy. However, if they do, it should be time limited and recipients should be graduated to market terms as rapidly as possible.

5.2.7 Short-Term and Longer Term Credit

All of the projects reviewed in this study included a

short-term credit component. Only two-thirds of the projects included both short- and medium-term credit. Short-term credit (for a maximum of 1 year) was provided for crop production inputs: seed fertilizer, pesticides, hired help, and simple hand tools. Medium-term credit (of 1-3 years) was provided for the purchase of livestock, capital equipment, irrigation and land improvements.

A basic financial rule is that the future is uncertain and uncertainty has a price. The further project payoffs are into the future, the more uncertain those payoffs are; that is, unfor-seen problems can develop as assumed costs, prices, and other factors change -- often dramatically. From a banker's perspective, the longer a loan is outstanding, the greater the risk of default. Given the risk inherent in lending to small farmers for new technology, there should be a substantial premium for longer term loans. However, in the projects reviewed, that was not the case. A typical 6-month loan might carry an interest rate of 8 percent, whereas a 3-year loan would be available at 10 percent. In addition to the default risk, the inflation risk is also a function of time. A lender might be able to make a rough estimate of inflation for the next 6 months, but in most developing countries it was difficult to make that same estimate for 3 years into the future.

A final problem was that medium-term, high-value loans tended to go to larger farmers. Medium-term loans were usually used for large capital investments such as tractors and other equipment, land clearing and improvements, irrigation facilities, livestock, and buildings. Small farmers, with a more labor-intensive mode of production generally needed money for small working capital investments (e.g., seed, fertilizer, tools). The type of longer term investments most suited to small farmers needs are, of course, a function of country-specific technology. Such longer term investments include dairy cattle, minor land improvements, tree crops, and small irrigation pumps.

The lessons in this case are as follows:

-- To protect the financial solvency of lenders, they should emphasize short-term production loans.

-- If longer term loans are provided, a sufficiently large-risk premium must be included to protect the lender.

-- Longer term lending programs must include a means to protect the lender from the uncertainties of inflation.

-- Longer term lending programs run the risk of favoring larger farmers who want big-ticket, capital investments. A project must guard against such a bias by identifying a limited list of longer term, small-farmer investments.

5.2.8 Collateral

Traditionally, credit agencies have required collateral, usually land, as loan security. This practice effectively excludes tenants and small farmers who often lack official land titles. For the few who are able to pledge land as security, foreclosure is not only difficult to implement but often politically unacceptable. The question remains: for a credit program to successfully target small farmers, what are the alternatives to land collateral? Some alternatives have proven successful and include the following:

-- Appraising the productive capacity of small-farmer holdings to determine creditworthiness

-- Assuring that the loan will be used for productive and economically viable purposes (that the new technology is appropriate and will increase agricultural output)

-- Chattel mortgages (equipment, cattle, chickens)

-- Liens on crop production; crop liens work best when repayment is coordinated with crop marketing and are most effective with cash crops (e.g., coffee, sugar, tea).

-- Group guarantee. This approach often works well when the loan is made publicly to groups such as co-ops and the members are individually and collectively responsible for the loan.

The Indonesia Provincial Area Development Program relied on character references from local-level officials for loan eligibility. Loan default risks were also greatly reduced by establishing very low ceilings on initial loans. In Honduras, the Small Farmer Coffee Improvement Project is trying to mitigate problems of coffee rust by assisting small farmers to increase their yields and incomes so that they can afford the required rust control measures. There is no land title requirement for loan security. Loan approval is based on the amount of land the farmer uses for coffee production, the percentage of income derived from coffee production, and the farmer's credit and production history. As we discuss in Section 5.3.4, the Mapuche Livestock Development Project in Chile uses cattle as collateral.

To conclude, a credit scheme with a liberalized collateral policy greatly enhances the chances of reaching small farmers.

5.3 Credit Delivery Issues

5.3.1 The Use of Existing Institutions Versus the Creation of New Institutions

Institutional development is a long and difficult process. Every effort should be made to see if a well-run, existing bank or cooperative can administer a project's credit program. If the institution is already lending to small farmers, the task is that much easier. If the institution is not lending to small farmers, or is not familiar with the project's crops, some adjustments will be needed. The bank may need to open a separate "small-farmer credit window," and loan officers may need special training. Whatever the needs, it is usually easier to put project resources into that institution and piggyback on its established structure.

Although the use of an existing institution is a good indicator of project success, project designers may not have that opportunity. A developing country's level of development often influences project structure. Poorer developing countries usually have a limited institutional base. Projects in those countries often have no choice: existing institutions are woefully inadequate or just not available.

Although it is best to work through existing institutions, new ones must be created when none exist. The initial task, therefore, is discovering what kinds of local institutions and organizations exist and then identifying those that can handle a credit program. Goran Hyden notes that in Africa there are a variety of informal groups that should be used by public development organizations.{13} Generally, these informal groups can be strengthened by focusing on the task to be accomplished. Organizations will be most successful if they are organized around specific tasks and the organizational form is based on the nature of the task. The majority of the projects (88 percent) worked at strengthening existing financial institutions. Only 12 percent of the projects created a new financial institution. Of those that created new institutions, all but one started with informal groups of farmers and attempted to create viable co-op or credit union movements. The Bolivia Small Farmer Organization Project established a co-op movement, but apparently randomly grouped farmers together rather than using existing informal groups. Consequently, the co-ops were operated in an undemocratic manner; wealthier members controlled the co-ops, took the bulk of the loans, and then defaulted on the loans. Perhaps the project might have been more successful had the co-ops been chosen from existing groups of farmers. Kinship and other groups that have a shared economic/social interest are often the most successful. Local initiative of informal groups often builds a strong foundation for successful credit projects.

{13} Goran Hyden, No Shortcuts to Progress: African Development Management in Perspective (Berkeley, California: University of California Press, 1983).

5.3.2 Type of Institution

In many countries, governments have established specialized agricultural credit institutions. Most are state owned or have majority government participation. Agricultural banks are operated through highly centralized bureaucratic structures, which tends to make them ill-suited for lending to large numbers of highly dispersed small farmers. Excessive centralization, when dealing with small farmers, often results in increased administrative costs, an inability to adjust programs to local conditions, and political interference.

To overcome problems associated with excessive centralization, many of these projects have tried to work through farmer groups or cooperatives to reach small farmers. The idea is that when the group or co-op is the final mechanism for delivering credit, it represents a form or organization that embodies decentralization of control and decision-making and incorporates local knowledge and responsibility.

The terms "cooperatives" and "farmer groups" cover a wide range of organizational forms. Farmer groups are usually informal, organized around a village, kinship, or common economic interest. As mentioned, it generally works best to use already existing groups. Also, the smaller the group the better (typically 10-20 members); larger groups tend to lose their social cohesiveness. The Egypt Small Farmer Production Project enabled farmers to take advantage of mechanization and new/improved technologies by the voluntary grouping of small farmers into "block farming areas." These groups received credit from village-level banks and technical services from a well-coordinated village extension system that worked closely with the village banks. It is important to remember that almost any institution can successfully address the needs of small farmers if it has a village-level program.

Formal cooperatives are usually larger scale operations, built around such functions as distributing credit, supplying inputs, marketing output, and managing joint investments such as storage facilities or processing plants. Successful co-ops must have a certain minimum volume of operations. The majority of the projects we studied (64 percent) used co-ops to distribute credit. The most frequent cause of project failure was essentially the complexity of tasks involved. If one component of the co-op function fails, then the entire co-op is at risk. For example, if the co-op is responsible for marketing outputs and does not market properly, farmers could become delinquent on their loans.

The Cameroon Small Farmer Credit Project utilized a full service co-op approach. However, the Cameroon co-ops were not successful at marketing, input supply, or extension. With such problems, it is difficult for the primary credit intervention to be successful. Sometimes it is best to concentrate on a single task -- credit -- rather than attempt to supply an entire range of services.

A warning is required on groups. In some cases groups have not been very successful. Well-to-do interests have taken over

groups, and some farmers (such as women and minorities) have been excluded. Groups are only as democratic and effective as other institutions in the developing country. If the local rules and customs work against the disadvantaged, the groups may do the same.

When they function properly, the use of groups and co-ops to deliver credit to small farmers has numerous advantages. Decentralization of the daily aspects of management increases the adaptability of credit programs to local conditions and reduces the time required to process loan applications and make other decisions. Local knowledge can be used to assess the risk of lending to a particular farmer and that farmer's investment opportunities. This, with group responsibility for loan repayment and equity participation in the co-op, should reduce default. Furthermore, organizing farmers into groups raises the average size of loans -- thereby reducing costs -- and increases the political influence of the small farmer.

5.3.3 Loan Delinquencies and Defaults

Agriculture is a risky and uncertain business. The same is true for agricultural loans. Loan delinquencies (delayed payment) and loan defaults (no payment) are indicators of two factors: (1) the productivity of farm investments and (2) lender effectiveness in administering a credit program.

Only 10 percent of the 150 project evaluations reviewed quantified default rates. The record was somewhat better for delinquencies; roughly half of the evaluators examined delinquency rates. Even with the lack of complete data, some judgments can be made.

As would be expected, delinquency rates are a good indicator of project success. Unsuccessful projects had delinquency rates that ranged from 10 percent to 75 percent, with most falling between 25 percent and 50 percent. The successful projects had delinquency rates from 0 percent to 15 percent, with most below 5 percent. The rates in partially successful projects were around 20 percent. Although comprehensive default data are not available, it appears that successful projects had rates of 2 percent to 3 percent. The less successful projects had much higher delinquency rates.

Generally, default rates were much lower than delinquency rates. Bad weather or other problems might reduce a farmer's production and prevent paying off the loan. However, with the next crop the farmer should be able to make the loan payments. A lending institution needs to be able to carry its borrowers through a bad season or problems (maybe even help them correct some of their problems) and then in the next season, follow up to ensure repayment. The mark of a good institution is its ability to closely monitor delinquencies and prevent defaults.

To use an analogy, a medical doctor uses a few simple screening indicators (such as temperature and blood pressure) to identify a sick patient. Based on such indicators, the doctor can then work on diagnosing the exact disease and applying a treatment. A similar situation exists for lenders. A default often means that something has gone very wrong and the patient is close to death; the lender needs to heal the patient before that stage.

Delinquencies are an early indicator of problems. If a borrower is having problems, steps can be taken to improve the prospects for repayment. A lender needs to monitor borrowers using loan officers and a good accounting system. The lender needs warning of potential problems.

A major difference between good and bad projects was whether they had a system that promptly alerted management to slow or late payments. Once such weak loans were identified, corrective actions could then be taken.

A final warning is needed on the loan application process. The thoroughness of a loan application form and the number of bureaucratic levels of loan review had little relationship to repayment rates. The same could be said for the type of collateral used or the use of loan cosigners. The key factor was the local loan officer. The officer's ability to judge the character and creditworthiness of a borrower (and the profitability of a proposed investment) was critical to project success. An additional factor was the accounting and loan monitoring system. Many a project failed because of inadequate bookkeeping -- the institution did not know who owed how much and when payments were due.

Successful projects included technical assistance and training for loan officers and bookkeepers. Projects that failed almost always lacked an effective training component.

5.3.4 Credit In-Kind or Cash

There are advantages to providing seeds, implements, and other inputs directly to farmers rather than credit to purchase these inputs. This relieves the small farmer of the need to handle unfamiliar transactions. It also provides the institution with some assurances that the credit is used for the intended purposes. Small farmers can more easily understand and relate to in-kind credit delivery than to cash transactions. If credit is delivered in-kind, it also makes sense to use some form of in-kind credit repayment.

The credit agency can be paid out of the farmer's output. The Mapuche Livestock Development Project in Chile is a successful example of such a credit project. The Mapuche Indians are isolated on reservations in the ninth region of Chile. The Government had had little success with extension service;

however, Catholic Relief Services helped to establish a model working dairy farm with the Mapuche Livestock Development Association. The farm is entirely self-supporting, functions commercially, and also incorporates many cooperative functions. A revolving credit fund provides for land rehabilitation and farm infrastructure; purchases of dairy cows, feed concentrate, and artificial insemination supplies; and dairy herd improvement. The success of the revolving credit fund can largely be attributed to the in-kind credit repayments (cows). Three years into the project, only five farmers had been delinquent and had to give back their cows.

Credit, especially in-kind, must be timely. If provided too early or too late, it leads to diversion or loss. Because farmers are seasonal borrowers, if in-kind credit is received after the planting season, the farmers risk their entire annual earning.

There is even more emphasis on appropriate technology if the credit is in-kind. The technology package must be tested and proven appropriate. The El Salvador Agrarian Reform Credit Project provided in-kind credit for cattle, electric milking machines, and items to improve pastures. Some of the cows provided to small farmers had tuburculosis or were half-starved. It is evident that this contributed to the failure of the project.

There are no easy answers when deciding whether credit should be in-kind or cash. Small farmers are usually not very familiar with a monetized economy. Although in-kind credit helps to familiarize them, they eventually must graduate to cash credit. There is an element of donor trust involved. The earlier assumptions about the stubborness of peasants in adopting innovations have proven incorrect. Basically farmers make rational decisions; that is, they assess situations and decide between alternatives based on their assessment of risks, uncertainties, and likely benefits. Small farmers can be trusted to make appropriate decisions concerning credit they receive in cash.

APPENDIX A

THE 1973 A.I.D. SPRING REVIEW OF SMALL-FARMER CREDIT{1}

The Spring Review reached several conclusions; the major ones are presented below.

1. A successful credit program requires improvement in technology, backed by markets that can supply the necessary inputs and absorb the output. Country studies indicate that credit programs have had limited success in developing countries that lacked adequate markets.

2. Although many small farmers without access to public credit have shifted to more productive agricultural technologies,

evidence suggests that a shortage of capital is a constraint on the adoption of new techniques by small farmers. When conditions for success are met, an expansion of credit leads to increased small-farmers production.

3. Public sector credit programs often fail to produce a significant expansion in the availability of credit to small farmers because public funds are usually limited, part of the inflow of public sector credit into agriculture may be offset by an outflow of private credit, loans to small farmers are used in part for consumption, and much public credit goes to the larger and politically more powerful farmers -- even in programs intended to help the small farmer. Also, loans to small farmers are more costly and difficult to administer and supervise. They often have higher default rates, yet public institutions are not permitted to levy interest charges high enough to cover such costs.

4. Marketing infrastructure, particularly feeder roads, storage facilities, and retail channels for agricultural inputs (and sometimes consumer goods), has an important influence on farm production and income. Investments in these may overcome bottlenecks that could impede the viability of output-oriented credit programs.

5. Resources provided to marketing organizations can improve farm production and profitability. Innovative methods to support input suppliers should be considered in conjunction with other means of promoting agricultural innovation. Support for farmers' storage of crops by providing flexible loan repayment schedules and loans for building local storage facilities can help farmers. Marketing organizations, such as cooperatives, can improve the bargaining position of small farmers. They should be administered to maximize their service to farmers rather than to provide unconditional protection.

For various reasons the requirements for success in a small-farmer credit program are difficult to meet. It seems likely that they have not been met in many of the current public credit programs.

If these arguments are correct -- (1) that a necessary condition for extending credit is for output-increasing technology to exist and be profitable, (2) that reducing the risks associated with new technology is critical for the small farmer, and (3) that technical assistance must accompany the technology to speed its adoption -- then several policy implications follow:

-- Expansion or support of credit programs makes little sense until output-increasing and profitable technology is available and understood by potential borrowers. Extending credit in the absence of technology will lead to meager or even negative results for the borrower and the lender.

-- Credit becomes important only after adoption of new technology begins. If credit is not readily available once new technology becomes available, however, small farmers will be less likely to share in the benefits.

-- More emphasis must be placed on training a pool of technicians to ensure that new technology accompanies credit in a form that the small farmer can understand and use.

-- Adequate price incentives and markets must exist for a new technology to be profitable. Output-increasing technology, a market, and reasonable and stable prices must all exist if adoption is to take place; it is useless to argue which should come first.

-- If new technologies are to become available, existing and new research resources must be shifted to focus directly on solving small-farmer production and marketing problems. Technology is not neutral among types of farmers. Lending and technical agencies, nationally and internationally, must be sensitive to the income-distributive effects of changes in technology on the various rural groups, especially in countries with inequitable land tenure.

-- Because risk is important for the small farmer, then (1) new technologies must be developed that are more dependable under uncertain weather conditions; (2) ways must be found of assuring the farmer that failure will not result in a major penalty; and (3) extension and technical assistance efforts should focus on finding ways of reducing the risks as perceived by the farmer.

{1} Gordon Donald, Credit For Small Farmers in Developing Countries (Boulder, Colorado: Westview Press, 1976).

APPENDIX B

QUESTIONS FOR AN EVALUATION

1. SUITABILITY OF TECHNOLOGY

There must be a way for farmers to invest credit productively. If a suitable technology (along with supporting services) does not exist, then the farmer cannot increase production and generate income to service new debt. It cannot be assumed that profitable small-farmer investments exist. Most small-farmer credit programs fail for this reason.

Only if a suitable technology exists can the next question be asked -- what is needed to encourage the small farmer to adopt the technology, and is credit essential to the adoption process? The following are issues to be considered:

-- Does a proven technology exist that is appropriate to farmer needs?

-- Is the new technology being used at recommended rates? Why or why not?

-- Are the returns to the technology great enough to overcome the farmer's risk-aversion attitude? How great is the risk variability of the new technology?

-- Are supporting services available and dependable enough to support the new technology. (The farmer needs assured input supply, marketing, and other services.)

-- What type of extension method was used? Was it provided to groups or to individuals? How frequently was it provided? Were demonstration plots used?

2. GOVERNMENT POLICIES, REGULATIONS, AND CONTROLS

Government policies often discriminate against the rural sector. For example, if a government has a policy of cheap food for urban consumers, high taxes on export crops, cheap capital, high minimum wages, and an overvalued foreign exchange rate, then there may be serious problems with any attempt to encourage increased agricultural production. Appropriate policies are a precondition for the adoption of improved technology and the related use of credit. Policymakers should examine the following questions:

-- Do farmgate prices of crops justify the increased agricultural investments required for the new technology?

-- Do land tenure and rules on access to water and other inputs encourage increased marketable production?

-- Are input supplies (at the farm level) available in adequate quantities, on a timely basis, and at prices that justify their use?

-- Does government policy subsidize (or tax) one crop at the expense of another or subsidize (or tax) one input at the expense of another crop? Will such subsidies or taxes defeat the use of the new technolgy and the related credit component?

3. CREDIT DELIVERY AND INSTITUTIONAL MECHANISMS

High transactions costs and high loan default rates can rapidly decapitalize a loan program. Rapid decapitalization may be a reflection of financial, technological, and administrative problems. Decapitalization is not a cause of project success or failure in itself but rather is a symptom.

We want to determine what makes technology absorbable by small farmers by identifying (1) the various approaches to credit delivery and (2) the climate for credit delivery (e.g., level of instituional capability, types of farmers, types of crops, and income level of farmers). The following questions should be examined:

-- Is credit part of a total agricultural package or is it a separate input?

-- Was credit given as cash or in-kind?

-- Was a target beneficiary group selected; why? Were specific credit uses or crops specified; why? What was the impact on women?

-- Were existing institutions used or was a new institution created; why?

-- What type of institution was used -- government ministry, parastatal, co-op, private firm, informal moneylenders; why? Does one type of organization/institution have a better track record than another; why?

-- Were loans provided to individuals or were groups used? Did group peer pressure affect loan use and repayment performance?

-- What was the degree of local participation in project design, loan management, and loan collection? Was it important to project success?

-- What use was made of co-ops, mobile banks, village-level intermediaries, and other outreach mechanisms?

-- What interest rate was used and why? Did it reflect true opportunity costs of capital?

-- Was the rate of return on production great enough to justify the cost of capital?

-- How was creditworthiness determined? What type of collateral was used and why? Did preloan credit analysis bear any relation to actual loan repayment experience?

-- What were the administrative costs to the project

authority and to the individual farmer?

-- How complicated was the loan application paperwork, and how much time did the farmer have to invest in getting a loan? Did the thoroughness of the loan application improve loan recoveries? Did it discourage farmers?

-- Did the use of local village intermediaries or other innovative techniques reduce costs and improve repayment rates?

-- Did farmers "graduate" to other loan facilities?

4. RURAL RESOURCE MOBILIZATION

Subsidized credit targeted to a disadvantaged group may become a politically useful social welfare mechanism. However, it also runs the risk of failing the test of economic efficiency and sustainability. Such programs cannot meet the credit needs of the majority of the population and usually have to ration credit to the safest borrowers. Such programs are dependent on outside funding and are not a part of the local community. They are viewed by the local community as an outside government dispenser of favors. Distrust toward such an outsider can develop.

Borrowers are more likely to repay loans promptly when they know that the resources come from their neighbors. A local institution attuned to local savings and borrowing needs of its own people has the best chance to be viable. The questions requiring an analysis include the following:

-- Does the project more closely match the social welfare model or the model of a financial intermediary that is attuned to local financial needs by both mobilizing resources and providing loans?

-- Are there case studies (Ohio projects) that prove this thesis?

-- What has been the success in raising local savings?

-- Does loan discipline in fact improve if the institution provides both savings and loans?

-- What mechanism was used to keep the program ahead of inflation?

APPENDIX C

CREDIT ISSUES CHECKLIST FOR PROJECT DESIGN

1. BROAD MACRO ISSUES: FACTORS OUTSIDE PROJECT CONTROL

A. Technology and supporting services. (Do profitable and realizable investments exist?)

-- Is the rate of return on the new technology great enough and dependable enough to justify the investment?

-- Are supporting services and institutions (inputs, output marketing, and other services) available on a timely basis?

B. Level of development (per capita income). (Projects must recognize that the developing country's level of institutional development affects project success and must be taken into account in project design.)

-- What are the geographic and regional influences?

- Africa is a special, low-income case with a low level of institutional development.

- Latin America has sophisticated institutions that are often not small-farmer oriented.

C. Integrated agricultural development versus credit-only programs. (Credit can be part of a total package -- technology tied to credit -- or a separate operation.)

-- Under what conditions does one or the other work best?

D. Government policies, regulations, and controls.

-- Are they biased against the rural, agricultural sector?

E. Inflation.

-- How can a project protect its capital base?

F. Rural Resource Mobilization Projects (projects that include a savings component).

-- Are any special country conditions required to mobilize savings?

2. FINANCIAL POLICIES

A. Interest rates and interest subsidies.

-- How will the interest rate be choosen?

-- Is a subsidy important to project success?

-- Is there a plan to eliminate the subsidy?

-- What is the source and cost of loanable funds?

-- How will the interest rate affect profitability?

B. Institutional development.

-- What local capacity exists, and what elements need to be strengthened?

C. Financial viability (the key to self-sustaining programs).

-- Does the project have a clear (time-specific) plan to reach financial viability?

D. Lending for nonagricultural purposes. (Although it helps to have a broadened portfollio to spread risks, it makes it harder to ensure reaching the target group.)

-- How will it affect project success?

E. Keeping large farmers from taking over the program.

-- Does the project focus on short-term production credit?

-- Does the project use institutions that favor small farmers?

-- Does the project liberalize collateral requirements and application procedures for small farmers?

F. Graduating beneficiaries to nonconcessional loan programs.

-- Is there a plan to graduate beneficiaries to other, nonconcessional loan programs?

G. Short-term versus longer term lending.

-- Is there a premium for longer term loans?

-- Are lenders protected against inflation?

-- Are investments for medium-term loans identified so they can be limited to small farmers?

H. Collateral.

-- What will best ensure repayment?

3. CREDIT DELIVERY: WHAT INSTITUTIONAL ARRANGEMENTS WILL WORK BEST

A. Use of existing institutions versus the creation of a new institution.

-- When does each approach make sense and why?

B. Type of institution.

-- What institution best serves the needs of target beneficiaries: banks, co-ops, or direct lending programs?

C. Delinquency, default rates, and repayment performance.

-- What is the loan application and approval process?

-- How are loans extended, supervised, and monitored?

D. Credit in-kind or cash.

-- When does it make a difference?

APPENDIX D

OTHER APPROACHES TO SMALL-FARMER CREDIT

A.I.D. small-farmer credit projects reflect AID's development strategy. The World Bank and most other donors follow policies similar to A.I.D.'s policies. Some donors, however, have quite different approaches.

In June l985, A.I.D. and the International Fund for Agricultural Development (IFAD) met to discuss small-farmer credit. The examination of A.I.D. and IFAD policies that came out of that meeting provides a useful way of comparing and contrasting two very different approaches to small-farmer credit.

It is useful first to summarize A.I.D.'s approach. AID assistance is designed to help developing countries construct the proper development environment (appropriate market prices, economic incentives, viable institutions) so that efforts to cure the development constraints (technology, research, extension, credit, investment) can effectively take place. Before tackling constraints, A.I.D. focuses heavily on national economic policies and institutional development. A.I.D. works to encourage developing country policy reforms so that the prices of agricultural inputs and marketed crops reflect true opportunity costs. Appropriate price incentives encourage increased production and give other development efforts a better chance of succeeding. The creation of viable, self-sustaining developing country institutions is seen as a way of providing a continuing stream of benefits to the poor.

A.I.D.'s emphasis on economic policies and institutions assumes that once "prices are right" and services are available, small farmers will reap the benefits. That may not be the case if a developing country's political/economic structure is tilted against small farmers.

If small farmers lack resources (or access to resources), they may fail to benefit from policy and technology changes. Most small-farmer credit projects are designed to increase agricultural output. However, the landless, tenant farmers, and those with only small plots of land lack the resources to benefit from the new technology and may receive only limited benefits or none at all. Price reforms, financial market reforms, and institutional development benefit all farmers. Quite often, larger farmers receive a disproportionate share of those benefits.

Critics view A.I.D.'s approach as too macro-oriented, too diffused, and too far removed from the poor to fully benefit them. Economic policy reform and institutional development are top-down, indirect approaches that are several steps removed from small farmers. They stress that the way to help small farmers is to provide them directly with resources. In addition, because farmers are poor, they need subsidized resources (cheap credit). The critic's approach is a targeted, supply-push strategy of getting resources (money) into the hands of small farmers.

In contrast to A.I.D.'s constraints approach, the targeted approach used by IFAD starts by identifying the poor and then designing projects that will bring benefits directly to those people. Such an approach concentrates on projects that mobilize the poor at the grass-roots level and then provide them with capital, technology, and other inputs. Development institutions are seen as a secondary means of supporting small-farmer development.

The problem with such a targeted approach is sustainability. A.I.D. has tried projects where subsidized credit is provided to a group of small farmers. Although A.I.D. has found that they do bring specific and immediate benefits to the target group, they are often a one-shot affair. If the developing country institution is lending at a loss and loan defaults are mounting, the loan fund will not recycle -- the capital will soon be exhausted. The financial process is not sustainable, and farmers do not receive a continuing stream of financial services.

There are other problems beyond the issue of institutional sustainability. A project may work well, but small farmers will never advance if government policies and supporting services are not meeting their needs. Donor assistance at the micro, or project, level cannot turn the tide of negative, macro factors. Small farmers need more than resources. That is why A.I.D. small-farmer credit programs work on both macro and micro constraints -- economic policies, infrastructure, institutional development, technology, agricultural support services, and credit.

A.I.D. emphasizes the macro approach because it appears most suited to the multiple problems facing developing country small farmers. Other donors emphasize the micro approach. Clearly, neither offers a complete solution. In A.I.D.'s macro approach there is always a danger that benefits will be diverted and not reach the small farmers. On the other hand, the targeted approach may succeed in putting resources into the hands of farmers, but the resources will be of little use if economic policies and service institutions are inappropriate. The argument, of course, is not an either/or issue. No donor relies completely on one single approach. The real issue for credit projects is to determine the optimum mix between targeted and constraints approaches.

APPENDIX E

PROJECT EVALUATIONS AND AUDITS REVIEWED FOR THIS STUDY

No.	Project Number	Document Number	Region or Country	Evaluation Type{a}
1	698-0391	PD-AAI-382	Africa Reg.	Interim
2	698-0391	PD-AAI-381	Africa Reg.	SER
3	698-0391	PD-AAA-591	Africa Reg.	SER
4	625-0605	PD-AAJ-610	Africa Reg.	Audit
5	388-0037	PD-AAH-307	Bangladesh	Audit
6	388-0025	PD-AAL-998	Bangladesh	Final
7	511-0455	PD-AAA-078-A1	Bolivia	Final
8	511-0364	PD-AAA-107-Q1	Bolivia	SER
9	511-0452	PD-AAA-070	Bolivia	SER
10	511-0364	PD-AAA-103	Bolivia	PAR
11	511-0452	PD-AAA-069	Bolivia	SER
12	511-0452	PD-AAA-067	Bolivia	Final
13	511-0364	PD-AAA-107	Bolivia	SER
14	511-0364	PD-AAF-906-E1	Bolivia	PES
15	511-0481	PD-AAL-646	Bolivia	PES
16	511-0452	PD-AAH-481	Bolivia	Final
17	511-0486	PD-AAI-682	Bolivia	
18	511-0533	PD-AAN-261	Bolivia	PES
19	511-0053	PD-AAA-064	Bolivia	Audit
20	511-0455	PD-AAJ-771	Bolivia	PES
21	511-0455	PD-AAA-077-A1	Bolivia	Audit
22	511-0053	PD-AAH-670	Bolivia	PES
23	512-0247	PD-AAA-281	Brazil	MISC
24	631-0044	PD-AAG-782	Cameroon	Final
25	631-0001	PD-AAG-372	Cameroon	SER
26	631-0044	PD-AAN-331	Cameroon	PES
27	631-0025	PD-AAL-671	Cameroon	PES
28	631-0044	PD-AAP-855	Cameroon	PES

29	513-0277	PD-AAA-367-C1	Chile	Audit
30	513-0310	PD-AAF-914-B1	Chile	PES
31	513-0294	PD-AAA-372-A1	Chile	PES
32	513-0296	PD-AAH-979-A1	Chile	PES
33	514-0193	PD-AAF-919-A1	Colombia	PES
34	514-0193	PD-AAA-649-B1	Colombia	PES
35	514-094	PD-AAF-766-A1	Colombia	PES
36	515-0134	PD-AAH-717	Costa Rica	
37	515-0117	PD-AAA-679-A1	Costa Rica	Audit
38	515-0120	PD-AAI-764	Costa Rica	
39	515-0158	PD-AAJ-402	Costa Rica	
40	515-0117	PD-AAA-442-A1	Costa Rica	SER
41	515-0117	PN-AAD-110-A1	Costa Rica	SER
42	515-0189	PN-AAH-109-AS	Costa Rica	SER
43	517-0110	PD-AAA-720-A1	Dom. Rep.	PES
44	517-0136	PD-AAJ-404	Dom. Rep.	PES
45	517-0099	PD-AAH-203	Dom. Rep.	Final
46	517-0124	PD-AAN-992	Dom. Rep.	PES
47	517-0106	PD-AAA-712-A1	Dom. Rep.	Final
48	517-0136	PD-AAN-993	Dom. Rep.	PES
49	517-0110	PD-AAA-719-A1	Dom. Rep.	SER
50	517-0136	PD-AAH-308	Dom. Rep.	PES
51	518-0072	PD-AAA-739	Ecuador	SER
52	518-0102	PD-AAF-936	Ecuador	Final
53	263-0079	PD-AAM-693	Egypt	SER
54	263-0079	PD-AAN-693	Egypt	SE
55	263-0095	PD-AAM-778	Egypt	Audit
56	519-0263	PD-AAI-561	El Salvador	Audit
57	519-0267	PD-AAI-671	El Salvador	
58	641-0067	PD-AAG-106-A1	Ghana	PES
59	641-0067	PD-AAM-544	Ghana	Final
60	641-0102	PD-AAP-078	Ghana	Annual
61	520-0200	PN-AAB-626-A1	Guatemala	SER
62	520-0300	PD-AAM-055	Guatemala	SER
63	520-0204	PD-AAA-926	Guatemala	SER
64	521-0073	PD-AAA-991	Haiti	SER
65	521-0073	PD-AAF-955	Haiti	SER
66	522-0118	PD-AAF-962-B1	Honduras	PAR
67	522-0074	PD-AAB-036	Honduras	Final
68	522-0123	PD-AAF-334	Honduras	PES
69	522-0150	PD-AAM-400	Honduras	PES
70	522-0100	PD-AAI-306-A1	Honduras	PES
71	522-0133	PD-AAG-590-A1	Honduras	PES
72	386-0466	PD-AAL-289	India	PES
73	386-0466	PD-AAL-681	India	Audit
74	532-0046	PD-AAF-570-A1	Jamaica	PES
75	278-0186	PD-AAA-386-A1	Jordan	SER
76	615-0148	PD-AAA-218-B1	Kenya	PES
77	615-0148	PD-AAA-526-A1	Kenya	SER
78	615-0171	PD-AAG-048	Kenya	PAR
79	538-0003	PD-AAN-685	LAC Reg	Final
80	598-0579	PD-AAJ-280	LAC	PES
81	589-0116	PD-AAB-536-A1	LAC Reg	Final
82	598-0116	PD-AAG-027-A1	LAC Reg	PES
83	596-0069	PD-AAM-920	LAC ROCAPb	Audit
84	596-0069	PD-AAN-601	LAC ROCAP	PES

85	596-0068	PD-AAA-602-A1	LAC ROCAP	SER
86	632-0214	PD-AAJ-463	Lesotho	PES
87	632-0214	PD-AAP-171	Lesotho	PES
88	632-0214	PD-AAM-432	Lesotho	
89	669-0145	PD-AAI-702	Liberia	
90	669-0142	PD-AAG-345	Liberia	SER
91	669-0145	PD-AAM-575	Liberia	PES
92	612-0205	PD-AAP-086	Malawi	PES
93	688-0213	PD-AAI-049	Mali	Audit
94	683-0240	PD-AAN-731	Mali	Audit
95		PD-AAL-772	Mali	Audit
96	688-0202	PD-AAM-775	Mali	Audit
97	683-0201	PD-AAG-639	Niger	SER
98	683-0240	PD-AAM-817	Niger	SER
99	683-0205	PD-AAM-358	Niger	Audit
100	683-0201	PD-AAC-141	Niger	PAR
101	525-0173	PD-AAL-185	Panama	
102	525-0173	PD-AAI-674	Panama	
103	526-0101	PD-AAB-325-A1	Panama	PES
104	526-0118	PD-AAL-490	Paraguay	PES
105	526-0067	PD-AAB-314-A1	Paraguay	PAR
106	526-0101	PD-AAB-712-A1	Paraguay	PES
107	526-0050	PD-AAB-328-A1	Paraguay	Audit
108	526-0101	PD-AAB-327-A1	Paraguay	PES
109	527-0136	PD-AAG-301	Peru	Final
110	527-0156	PD-AAF-280-A1	Peru	PES
111	527-0163	PD-AAM-409	Peru	Audit
112	527-0060	PD-AAB-374	Peru	SER
113	527-0163	PD-AAF-573	Peru	Audit
114	527-0156	PD-AAI-461-A1	Peru	PES
115	527-0061	PD-AAF-574-A1	Peru	Audit
116	696-0100	PD-AAN-367	Rwanda	Audit
117	931-1134	PD-AAL-653	S&T	Audit
118	931-1134	PD-AAI-864	S&T	PES
119	931-1134	PD-AAI-821	S&T	
120	931-1134	PD-AAD-282	S&T	SER
121	931-1134	PD-AAD-283-A1	S&T	PES
122		PD-AAN-916	Sahel	Audit
123	685-0201	PN-AAG-631	Senegal	Interim
124	621-0117	PD-AAG-067	Tanzania	Audit
125	621-0117	PD-AAB-593-F1	Tanzania	PES
126	521-0117	PD-AAF-284	Tanzania	PES
127	621-0155	PD-AAP-458	Tanzania	PES
128	621-0117	PD-AAA-535-A1	Tanzania	SER
129	621-0117	PD-AAJ-438	Tanzania	SER
130	621-0155	PD-AAP-023	Tanzania	SER
131	664-0302	PD-AAG-130-B1	Tunisia	PES
132	664-0302	PD-AAG-131	Tunisia	SER
133	617-0102	PD-AAN-880	Uganda	Interim
134	617-0102	PD-AAQ-236	Uganda	Interim
135	617-0102	PD-AAP-240	Uganda	Interim
136	617-0102	PD-AAN-881	Uganda	Interim
137	617-0102	PD-AAQ-096	Uganda	PES
138	617-0102	PD-AAP-241	Uganda	Interim
139	617-0102	PD-AAP-116	Uganda	Audit
140	617-0102	PD-AAM-259	Uganda	Final

141	686-0201	PD-AAH-673	Upper Volta	Audit
142	698-0106	PD-AAJ-791	Upper Volta	Interim
143	686-0201	PD-AAJ-585	Upper Volta	Audit
144	686-0212	PD-AAJ-643	Upper Volta	PES
145	528-0100	PD-AAB-431-A1	Uruguay	PES
146	528-0100	PD-AAB-430-F1	Uruguay	PAR
147	528-0092	PD-AAL-309	Uruguay	PES
148	529-0019	PD-AAH-623	Venezuela	SER
149	685-0201	PD-AAC-150	Senegal	SER

{a} Types of evaluations:

Interim - mid-term evaluation or special report.
Audit - An audit report prepared by A.I.D.'s Inspector General.
SER - Special Evaluation Report; designed to answer unique program issues.
PES - Project Evaluation Summary; an annual A.I.D. evaluation report.
Final - Report that is prepared when a project is completed.

{b} ROCAP - Regional Office for Central America Programs. There are regional projects that cover a number of Central American countries.

APPENDIX F

CREDIT PROJECT SUCCESSES, PARTIAL SUCCESSES, AND FAILURES, BY REGION, COUNTRY, AND PROJECT

Successes

Region	Country	Project Title	Project No.
Lat. Amer.	1 Bolivia	Prod. Credit Guaranty	511-0486
	2 Chile	Mapuche Livestock Dev.	513-0310
	3 Dom. Rep.	Rural Savings Mobil.	517-0179
	4 Honduras	Co-op Devel.	522-0150
	5 Honduras	Small Farmer Coffee	522-0176
	6 Indonesia	Prov. Area Dev.	497-0264
	7 Panama	Co-op Dev. Loan	525-0173
	8 Paraguay	Inst. Dev. Credit	526-0101
	9 Peru	Rural Financial Inst	527-0174
	10 Uruguay	Revolving Loan Fund	528-0100
Asia	11 Bangladesh	Rural Finance Exp.	388-0025
	12 Bangladesh	Rural Finance Exp.	388-0037
Near East	13 Egypt	Small Farmer Prod.	263-0079
Africa	14 Liberia	Upper Lofa Dev.	669-0142
	15 Kenya	Ag. Credit	615-0148
	16 Cameroon	Credit Union Dev.	631-0044

Partial Successes

Region		Country	Project Title	Project No.
Lat. Amer.	17	Bolivia	La Merced	511-0533
	18	Bolivia	Ag. Devel. Sector I	511-0053
	19	Bolivia	Ag. Sector I	511-0455
	20	Dom. Rep.	Ag. Sector Loan I	517-0110
	21	Dom. Rep.	Ag. Mkting & Admin.	517-0136
	22	Honduras	Small Farmer Credit	522-0123
	23	Peru	Sub-Tropical Lands	527-0163
Near East	24	Tunisia	Supervised Credit	664-0302
Africa	25	Ghana	MIDAS	651-0067
	26	Kenya	Ag. Loan Sector I	615-0171
	27	Malawi	Savings/Credit Co-op	612-0205
	28	Niger	Cereals Prod.	683-0201
	29	Rwanda	Local Crop Storage	696-0107
	30	Tanzania	Food Crop Loan Prog.	621-0117
	31	Uganda	Food Production	617-0102
Lat. Amer.	32	Bolivia	Ag. Sector II	511-0481
	33	Bolivia	Rural Comm. Devel.	511-0364
	34	Bolivia	Small Farmer Devel.	511-0452
	35	Colombia	Rural S&L Co-ops	514-0193
	36	Costa Rica	Commodity Systems	515-0134
	37	Costa Rica	Ag. Sector Loan	515-0117
	38	Ecuador	Direct Ag. Credit	518-0072
	39	El Salvador	Ag. Reform Credit	519-0263
	40	Guatemala	Rural Devel.	520-0204
	41	Haiti	Small Farmer Credit	521-0073
Asia	42	India	Ag. Devel. Credit	386-0466
Africa	43	Africa Reg.	Direct Ag. Credit	698-0391
	44	Lesotho	Credit Union Dev.	632-0214
	45	Liberia	Ag. Credit Bank	669-0145
	46	Mali	Action Ble	688-0213
	47	Mali	Mils Mopti	688-0202
	48	Niger	Niamey Devel. (NDD II)	683-0240
	49	Tanzania	Village Prod. & Income	621-0155
	50	Upper Volta	Review of A.I.D. Act.	686-0201

APPENDIX G

FACTORS USED IN ANALYZING CREDIT PROJECTS AND STATISTICAL SUMMARY OF THOSE FACTORS

Factor	Abbreviation{a}
Was project tied to a specific technology package?	tech pack

Was technology appropriate and usable?	appro tech
Were supporting services included?	services
Were supporting services usable?	service appro
Were supporting services critical to project success?	service critic
Was project part of an integrated rural development approach?	IRD
Was it targeted to specific beneficiaries?	target
Was a new financial institution created?	new fin instit
Did project include a "true" savings component?	true save
Did project use:	
commercial banks?	comm banks
cooperatives?	co-ops
credit unions, private voluntary organizations?	other
Per capita income of developing country:	
least developed	lldc
other low income	low Y
lower-middle income	mid Y
Did project subsidize interest rate?	subsidy inter
Source of loan funds:	
government and donors	gov & donors
commercial banks	comm banks
private voluntary organizations, other	other
Type of financing:	
short-term	sh-term finan
medium- and long-term	med/long finan
Did large farmers capture project loan funds?	lg farm bias
Purpose of project:	
institutional development	insti devel
financial viability	finan viabil
Lending to nonagriculturalists?	farm & non
Was inflation a serious problem?	infla prob
Was there a specific collateral scheme?	spec collat
Delinquency rates	del rate

Default rates def rate

{a} These abbreviations are used in the following tables.

The following tables classify the 50 credit projects analyzed in this study based on their success, partial success, or failure. The tables present significant data on whether specific factors were present in these credit projects. In the tables, "n" means no; "y" means yes; "?" means unclear; and "-" means insufficient data.

Table G-1. Summary of Credit Project Factors by Project

Region / Country	Project Title	Project Number	Tech Pack	Appro Tech	Ser-vices	Serv Appro
Successes						
Latin America						
1 Bolivia	Prod. Credit Guaranty	511-0486	n	-	n	-
2 Chile	Mapuche Livestock Dev.	513-0310	y	y	y	y
3 Dom. Rep.	Rural Savings Mobil.	517-0179	n	-	n	-
4 Honduras	Co-op Devel.	522-0150	y	y	y	y
5 Honduras	Small Farmer Coffee	522-0176	y	y	y	y
6 Indonesia	Prov. Area Dev.	497-0264	y	y	y	y
7 Panama	Co-op Dev. Loan	525-0173	y	y	y	y
8 Paraguay	Inst. Dev. Credit	526-0101	y	y	y	y
9 Peru	Rural Financial Inst	527-0174	n	-	n	-
10 Uruguay	Revolving Loan Fund	528-0100	y	y	y	y
Asia						
11 Bangladesh	Rural Finance Exp.	388-0025	n	-	n	-
12 Bangladesh	Rural Finance Exp.	388-0037	n	-	n	
Near East						
13 Egypt	Small Farmer Prod.	263-0079	y	y	y	y
Africa						
14 Liberia	Upper Lofa Dev.	669-0142	y	y	y	y
15 Kenya	Ag. Credit	615-0148	n	-	-	-
16 Cameroon	Credit Union Dev.	631-0044	n	-	y	y
Partial Successes						
Latin America						
17 Bolivia	La Merced	511-0533	n	-	y	y
18 Bolivia	Ag. Dev. Sector I	511-0053	y	?	y	y
19 Bolivia	Ag. Sector I	511-0455	y	y	y	y
20 Dom. Rep.	Ag. Sector Loan I	517-0110	y	y	n	-
21 Dom. Rep.	Ag. Mkting & Admin.	517-0136	y	y	y	y
22 Honduras	Small Farmer Credit	522-0123	y	y	y	y
23 Peru	Sub-Tropical Lands	527-0163	y	y	y	y
Near East						

24 Tunisia	Supervised Credit	664-0302	y	y	y	y		
Africa								
25 Ghana	MIDAS	651-0067	y	y	y	y		
26 Kenya	Ag. Loan Sector I	615-0171	y	y	y	y		
27 Malawi	Savings/Credit Coop	612-0205	n	-	n	-		
28 Niger	Cereals Prod.	683-0201	y	?	y	y		
29 Rwanda	Local Crop Storage	696-0107	y	y	y	y		
30 Tanzania	Food Crop Loan Prog.	621-0117	y	y	y	y		
31 Uganda	Food Production	617-0102	y	y	y	y		

Failures

Latin America								
32 Bolivia	Ag. Sector II	511-0481	y	n	n	-		
33 Bolivia	Rural Comm. Dev.	511-0364	y	n	y	-		
34 Bolivia	Small Farmer Dev.	511-0452	y	n	y	n		
35 Colombia	Rural S&L Co-ops	514-0193	y	y	y	n		
36 Costa Rica	Commodity Systems	515-0134	y	n	y	n		
37 Costa Rica	Ag. Sector Loan	515-0117	y	n	y	n		
38 Ecuador	Direct Ag. Credit	518-0072	y	n	y	n		
39 El Salvador	Ag. Reform Credit	519-0263	y	n	y	n		
40 Guatemala	Rural Development	520-0204	y	n	y	n		
41 Haiti	Small Farmer Credit	521-0073	y	n	y	n		
Asia								
42 India	Ag. Dev. Credit	386-0466	y	?	y	?		
Africa								
43 Africa Reg.	Direct Ag. Credit	698-0391	y	n	n	-		
44 Lesotho	Credit Union Dev.	632-0214	n	-	y	?		
45 Liberia	Ag. Credit Bank	669-0145	y	y	y	n		
46 Mali	Action Ble	688-0213	y	n	y	?		
47 Mali	Mils Mopti	688-0202	y	y	y	?		
48 Niger	Niamey Dev. (NDD II)	683-0240	y	n	n	-		
49 Tanzania	Village Prod. & Income	621-0155	y	y	y	y		
50 Upper Volta	Review of A.I.D. Act.	686-0201	y	?	n	-		

Successes

Latin America								
1 Bolivia	-	n	y	n	?	y	y	y
2 Chile	y	n	y	n	n	n	n	y
3 Dom. Rep.	-	n	n	n	y	y	y	n
4 Honduras	y	n	y	y	n	n	y	y
5 Honduras	y	n	y	n	y	y	n	n
6 Indonesia	y	n	y	n	y	y	y	n
7 Panama	y	n	y	n	n	n	y	-
8 Paraguay	y	n	y	y	y	n	y	-
9 Peru	-	n	n	n	y	y	y	y
10 Uruguay	y	n	y	n	n	n	y	y
Asia								
11 Bangladesh	-	n	y	n	y	y	y	y
12 Bangladesh	-	n	n	n	y	y	y	n
Near East								
13 Egypt	y	y	n	n	n	y	n	n
Africa								
14 Liberia	y	y	y	n	y	y	y	-
15 Kenya	-	-	y	n	y	y	n	-

16 Cameroon y n n n n n y - -

Partial Successes

Latin America

17 Bolivia y n n n y n y - -
18 Bolivia ? n y n ? y n n -
19 Bolivia y n y n ? y ? ? -
20 Dom. Rep. - n y n ? y n y -
21 Dom. Rep. y n n n n y y n -
22 Honduras ? n y ? ? ? ? ? -
23 Peru y n n n ? y n n -

Near East

24 Tunisia y n y n n y n y -

Africa

25 Ghana y y n n ? y ? ? -
26 Kenya ? n y ? ? - y - -
27 Malawi - n y y y n y y y
28 Niger ? n n n ? n y - y
29 Rwanda y n y n n n y n y
30 Tanzania y b y n n n y - y
31 Uganda y n y n ? y y - y

Failures

Latin America

32 Bolivia - n y n ? n n y -
33 Bolivia - n y n ? ? ? ? -
34 Bolivia ? n n y ? n y n -
35 Colombia n n n n ? y y n -
36 Costa Rica ? n n n n y n y -
37 Costa Rica ? y y n n y n n -
38 Ecuador y n y n n n y n -
39 El Salvador y y y n n y y y -
40 Guatemala y y y n ? n y y -
41 Haiti ? y y ? n y y n y

Asia

42 India ? n n ? ? ? ? ? y

Africa

43 Africa Reg. - n y y n y y n ?
44 Lesotho ? n n n ? y n y y
45 Liberia y n y y y y n y -
46 Mali ? n n ? ? n n y y
47 Mali ? y n n ? ? y y y
48 Niger - n n n ? ? y - y
49 Tanzania ? n n ? n n y y y
50 Upper Volta - n n ? ? ? ? ? y

Successes

Latin America

1 Bolivia y - y y y y y y
2 Chile - y y y n y y y
3 Dom. Rep. - y n y y n y y
4 Honduras y - y y n n y y

5 Honduras	y	-	n	y	y	n	y	y
6 Indonesia	y	-	n	y	n	n	y	y
7 Panama	-	y	y	y	n	n	y	?
8 Paraguay	-	y	y	y	y	n	y	n
9 Peru	-	y	n	y	y	n	y	n
10 Uruguay	-	y	?	y	n	y	y	y
Asia								
11 Bangladesh	-	-	y	y	y	-	y	y
12 Bangladesh	-	-	n	y	y	n	y	y
Near East								
13 Egypt	y	-	y	y	y	-	y	y
Africa								
14 Liberia	y	-	y	y	n	-	y	?
15 Kenya	y	-	?	y	y	-	y	y
16 Cameroon	-	y	y	y	n	-	y	y

Partial Successes

Latin America								
17 Bolivia	y	-	y	y	-	-	y	y
18 Bolivia	y	-	?	y	n	n	?	?
19 Bolivia	y	-	?	y	y	?	y	y
20 Dom. Rep.	-	y	y	y	-	?	?	?
21 Dom. Rep.	-	y	y	y	y	-	y	?
22 Honduras	y	-	?	y	-	-	y	y
23 Peru	-	y	y	y	y	n	y	y
Near East								
24 Tunisia	-	y	y	y	n		y	y
Africa								
25 Ghana	y	-	?	y	?	?	?	?
26 Kenya	y	-	?	y	-	-	y	-
27 Malawi	-	-	y	y	?	?	y	y
28 Niger	-	-	?	y	-	-	y	y
29 Rwanda	-	-	y	y	n	n	y	y
30 Tanzania	-	-	y	y	n	n	y	n
31 Uganda	-	-	?	y	y	-	y	y

Failures

Latin America								
32 Bolivia	y	-	?	y	?	?	y	n
33 Bolivia	y	-	?	y	?	?	?	?
34 Bolivia	y	-	?	y	n	n	n	y
35 Colombia	-	y	?	y	n	n	y	y
36 Costa Rica	-	y	?	y	y	y	y	y
37 Costa Rica	-	y	y	y	y	n	y	y
38 Ecuador	-	y	?	y	n	y	y	n
39 El Salvador	y	-	?	y	y	n	y	y
40 Guatemala	-	y	y	y	n	n	y	y
41 Haiti	-	-	y	y	?	?	y	y
Asia								
42 India	-	-	y	y	?	?	y	?
Africa								
43 Africa Reg.	?	?	?	y	y	n	y	y
44 Lesotho	-	-	y	y	?	?	?	?
45 Liberia	y	-	y	y	y	-	y	y

46	Mali	-	-	?	y	?	?	y	y
47	Mali	-	-	y	y	?	?	y	n
48	Niger	-	-	?	y	n	n	y	y
49	Tanzania	-	-	y	y	n	n	y	y
50	Upper Volta	-	-	?	y	?	?	?	?

Successes

Latin America									
1	Bolivia	n	y	y	y	-	n	0	0
2	Chile	n	y	y	n	-	cows	v.low	?
3	Dom. Rep.	n	y	y	?	-	?	?	?
4	Honduras	y	y	y	n	-	-	0	0
5	Honduras	n	y	y	n	-	y	?	?
6	Indonesia	n	y	y	y	-	-	?	?
7	Panama	n	y	n	n	-	?	?	?
8	Paraguay	n	y	y	n	-	?	low	?
9	Peru	n	y	y	y	-	?	?	?
10	Uruguay	y	y	n	n	-	-	v.low	?
Asia									
11	Bangladesh	n	y	n	y	-	?	10	?
12	Bangladesh	n	y	y	y	-	?	?	?
Near East									
13	Egypt	n	y	n	n	-	?	low	2
Africa									
14	Liberia	n	y	n	n	-	?	15	?
15	Kenya	y	y	n	n	-	y	5	?
16	Cameroon	n	y	y	y	-	?	?	?

Partial Successes

Latin America									
17	Bolivia	n	y	n	n	y	?	7	?
18	Bolivia	n	y	n	n	y	?	3	?
19	Bolivia	n	y	n	n	-	?	?	?
20	Dom. Rep.	n	y	n	n	-	?	10.5	?
21	Dom. Rep.	n	y	n	n	-	?	?	?
22	Honduras	n	y	n	y	-	?	20	?
23	Peru	n	n	n	n	y	?	?	?
Near East									
24	Tunisia	n	n	n	n	-	n	high	?
Africa									
25	Ghana	?	y	n	n	-	?	?	?
26	Kenya	n	y	n	n	-	?	30	?
27	Malawi	n	y	n	y	-	?	25	?
28	Niger	n	y	n	n	-	?	?	?
29	Rwanda	n	y	n	n	-	n	?	?
30	Tanzania	n	y	n	n	-	y	29	?
31	Uganda	n	y	n	n	y	?	?	?

Failures

Latin America									
32	Bolivia	?	y	n	n	-	?	?	?
33	Bolivia	?	y	n	n	-	?	?	?
34	Bolivia	y	y	y	n	-	?	high	?

35	Colombia	n	y	y	n	-	-	?	?
36	Costa Rica	n	y	y	n	-	-	?	?
37	Costa Rica	y	n	n	n	-	-	?	?
38	Ecuador	n	y	y	n	-	-	high	?
39	El Salvador	n	y	n	n	-	-	?	?
40	Guatemala	n	y	n	y	-	land	?	?
41	Haiti	n	y	n	n	-	?	10	5
Asia									
42	India	?	n	n	n	-	?	poor	?
Africa									
43	Africa Reg.	n	y	n	n	-	?	32.5	0.5
44	Lesotho	n	y	n	y	-	?	25	?
45	Liberia	n	y	n	n	-	?	high	?
46	Mali	?	n	n	n	y	?	?	?
47	Mali	n	y	n	n	-	?	?	?
48	Niger	n	y	n	n	-	?	72	?
49	Tanzania	n	y	n	n	y	?	50	?
50	Upper Volta	?	n	n	n	-	?	75	?